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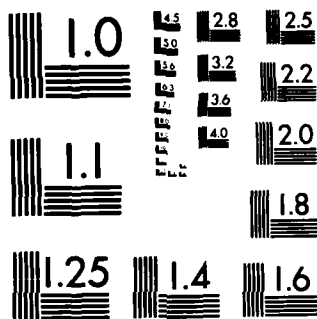
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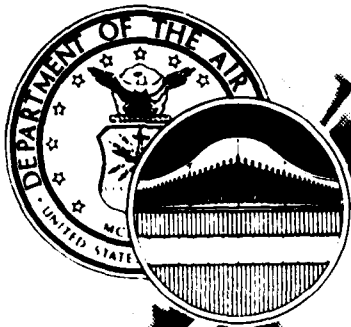
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UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

AVIONIC SENSOR SYSTEMS
AND AEROSPACE PHOTOGRAPHIC SYSTEMS REPAIR
CAREER LADDERS

AFSCs 322X2A, 322X2C, AND 404X1

AFPT 90-322-481/AFPT 90-404-481

JULY 1934

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150

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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Avionic Sensor Systems and Aerospace Photographic Systems Repair career ladders (AFSS 322X2A/C and 404X1). The project was directed by USAF Program Technical training, Volume Two, Section VIII, dated February 1981. Authority for conducting occupational surveys is contained in AFR 35-2. Computer printouts from which this report was produced are available for use by operating and training officials.

The survey instrument was developed by Captain Paul C. Thatcher, Inventory Development Specialist. Lieutenant Candy E. T. Otte, Occupational Analyst, analyzed the data and wrote the final report. Sergeant Ray Tackett provided computer programming support for the project. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Randolph AFB, Texas 78150.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel (see distribution list). Additional copies are available upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150.

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SUMMARY OF RESULTS

1. Survey Coverage. The Avionic Sensor Systems (AFSC 322X2A/C) and Aerospace Photographic Systems Repair (AFSC 404X1) career ladders were studied at the request of HQ AFMPC/MPCRPQ and 3400 TCHTW/TTGX to examine the existing 322X2A and C-shreds and assess a possible merger or separate 322X2 shred for the 404X1 personnel. The 801 respondents comprising the final survey sample include 209 members holding DAFSC 322X2A (about one-fourth of the sample and 68 percent of assigned), 193 airmen reporting DAFSC 322X2C (about one-fourth of the sample and 64 percent of assigned), and 375 personnel holding DAFSC 404X1 (about one-half of the sample and 73 percent of assigned). The career ladders, as well as using major commands, were well represented in the survey sample.

2. Career Ladder Comparisons. While there was some overlap among the AFSCs in terms of small percentages performing administrative, supervisory, training, and managerial duties, for the most part, the career ladders are clearly distinct in the jobs they perform maintaining systems associated with their AFS. The A-shred of the 322X2 career ladder maintains side-looking radar (SLR) and infrared (IR) systems. The C-shred maintains panoramic camera (PC), framing camera (FC), and viewfinder systems. The 404X1 maintains video and cockpit television systems and gun cameras (GC), motion picture camera (MPC), bombspotting camera (BC), radar recording camera (RRC) and strike camera (SC) systems. The A- and C-shreds have more commonality between them than either have with the 404X1 career ladder.

3. AFR 39-1 Specialty Description. The current descriptions were found to accurately portray the nature of the jobs in the 322X2A, 322X2C, and 404X1 career ladders.

4. Training Analysis. The STS and POI documents for all three AFSCs had tasks not referenced which had high percent members performing (greater than 30 percent). It was suggested that these areas be reviewed by technical school personnel. Overall, the training documents for all three AFSCs seem to be supporting the needs of the career ladders quite well.

5. Implications. No support was found for either merging the 404X1s with the 322X2Cs, or making the 404s a new shred of the 322 AFS, based on tasks and jobs performed. If there are other reasons which might require a merger of the 404X1s with the 322 AFS, then a shred may be the most viable alternative. A low experience level was found in the 322X2A AFSC which indicates severe problems for both the resident training and OJT programs.

OCCUPATIONAL SURVEY REPORT
AVIONIC SENSOR SYSTEMS AND AEROSPACE PHOTOGRAPHIC
SYSTEMS REPAIR CAREER LADDERS
(AFSCs 322X2A, 322X2C, AND 404X1)

INTRODUCTION

This is a report of an occupational survey of the Avionic Sensor Systems (AFSCs 322X2A and 322X2C) and Aerospace Photographic Systems Repair (AFSC 404X1) career ladders, completed by the Occupational Analysis Branch, USAF Occupational Measurement Center, in April 1984. The survey was requested by AFMPC/MPCRQ and the 3400 TCHTW/TTGX. Previous occupational survey reports (OSRs) of the 322X2 career ladder were published in July 1974 and September 1980. An occupational survey report of the 404X1 career ladder was published in November 1976.

Background

In March 1969, an Aircraft Electronic Reconnaissance Sensor Systems career ladder (AFSC 301X5) was established to install, maintain, and repair electronic reconnaissance sensors. In 1970, the career ladder was divided into two shreds, with the A-shred maintaining electronic sensor systems and the B-shred maintaining electro-optical sensor systems. The numerical designation was changed from 301X5 to 329X0A/B in January 1972. In April 1977, sensor equipment maintained by A-shred personnel had increased to such an extent that it became necessary to restructure the career ladder. Consequently, the 329X0A career ladder was divided into two new shreds within a newly created 322 AFS. The new A-shred (AFSC 322X2A) was designated to maintain reconnaissance electronic sensors. The new B-shred (AFSC 322X2B) was added to maintain the new tactical real-time display electronic sensors. The old B-shred (AFSC 329X0B), which involved maintenance of electro-optical sensors, was redesignated as the C-shred of the 322X2 career ladder.

Since the 322X2B AFSC was not an issue in this study, it was not included in this report. For information on the 322X2B AFSC, the reader should refer to the September 1980 Occupational Survey Report for AFSC 322X2A/B/C, AFPT 90-322-378.

The Aerospace Photographic Systems Repair career ladder (AFSC 404X1) was established in March 1954 as AFSC 402X0, Photographic Equipment Repair. In 1956, it was renamed "Photographic Repair." In 1964, the name was changed again, this time to "Aerospace Photographic Systems Repair." In July 1972, the numerical designation was changed from 402X0 to the current 404X1 designation, with no change in title.

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As described in AFR 39-1, personnel in the 322X2 career ladder are responsible for installing, maintaining, and repairing avionic sensor systems equipment. The 322X2A personnel perform duties related to reconnaissance electronic sensors, such as infrared detectors, side-looking radar, data display systems, and associated sensor control systems. The 322X2C personnel perform duties related to electro-optical sensors, such as optical cameras, mounts, viewfinders, aircraft camera parameter controls, and associated control systems. Personnel in the 404X1 career ladder inspect, install, remove, troubleshoot, repair, overhaul, calibrate, and modify electronic, radar recording, video tape recording, and optical aerospace photographic systems and associated electronic analyzers and test equipment.

Primary entry into both the 322X2 and 404X1 career ladders is from Basic Military Training. Technical training for both AFSCs is provided at Lowry AFB, Colorado. Course 3ABR322X2A is 110 days; course 3ABR322X2C is 98 days; and course 3ABR404X1 is 73 days in duration. The A- and C-shred attend a 226-hour G3AQR32020-005 Electronics Principles Course. The 404X1 receive electronics principles incorporated into their regular curriculum for a total of 183 hours. Successful completion of the tech school is mandatory for entry into all three AFSCs.

Purpose of Survey

The request for an occupational survey of the 322X2A/C and 404X1 career ladders originally came from AFMPC/MPCRPQ in 1981. During a March 1981 Maintenance Personnel Training, Classification, and Utilization Conference, a review of the 404X1 AFSC was conducted. The review centered around the ability of incumbents and future accessions to maintain state-of-the-art electronic-oriented equipment coming into the inventory. This equipment included Airborne Video Tape Recorders (AVTR) and Cockpit Television Video Systems (CTVS). Up to this time, the AFSC 404X1 was basically oriented toward mechanical and optical systems only. These new systems added electronic and video repair skills to the AFSC. As a result, MAJCOM representatives were concerned as to the qualifications of 404X1 personnel to maintain highly electronic equipment.

During the March 1981 Conference, various alternatives were discussed. The primary alternative appeared to be a partial or total merger with AFSC 322X2C. However, due to lack of quantification of 404X1 personnel's supposed inability to maintain these new systems, no change in AFSC structuring was approved. Thus, AFMPC requested an occupational survey of both AFSCs to explore the possibility of transferring some or all 404X1 duties into the 322X2 career field.

In addition to the request by AFMPC, the 3400 TCHTW at Lowry AFB requested an occupational survey to collect data on the new systems mentioned above. Data collected would be used to design a new 3ABR course.

Format of OSR

Since this report encompasses three career ladders, each with different systems responsibilities, and separate Specialty Training Standards (STS) and training courses, it is divided into five sections. The first section deals with the career ladder structure utilizing the total sample of the 322X2A, 322X2C, and 404X1 personnel. Section II contains discussion regarding the commonalities and differences between the three ladders. Sections III, IV, and V discuss the separate ladders, including such topics as: (1) comparison of the pertinent job structure and other survey data with career ladder documents, such as AFR 39-1 Specialty Descriptions and Specialty Training Standards; (2) analyses of Total Active Federal Military Service (TAFMS) groups and Duty Air Force Specialty Code (DAFSC) groups; (3) training analysis; (4) analyses of continental United States (CONUS) versus overseas groups; (5) analyses of major command (MAJCOM) groups; and (6) comparisons of current survey data with previous survey data.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey were USAF Job Inventory AFPT 90-322-481/AFPT 90-404-481, dated March 1983. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, tasks from previous survey instruments, and data from the last occupational survey reports (OSR). The task list was then evaluated in the field through personal interviews with subject-matter specialists of all three AFSCs from eight bases. The resulting job inventory contained a comprehensive listing of 865 tasks grouped under 23 duty headings and a background section containing such information as grade, duty title, time in service, job satisfaction, and the types of systems worked on.

Survey Administration

During the period April through August 1983, Consolidated Base Personnel Offices (CBPOs) in operational units worldwide administered the inventory to job incumbents holding DAFSCs 322X2A/C and 404X1. These job incumbents were selected from a computer generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each individual who was administered the inventory first completed an identification and biographical information section and then checked each task performed in their current job. After checking all tasks performed, each member then rated each task on a 9-point scale showing relative time spent on that task compared to all other tasks checked. The ratings ranged from one (very small amount time spent) through five (about average time spent) to nine (very large amount of time spent).

To determine relative time spent for each task checked by a respondent, all of an incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOM) and paygrade groups. Table 1 reflects the percentage distribution, by major command, of assigned personnel in the career ladders as of September 1982. Also listed in this table is the percent distribution, by major command, of respondents in the final survey sample. The 209 included in the final sample holding DAFSC 322X2A represent 68 percent of the assigned 322X2A personnel while the 193

personnel holding DAFSC 322X2C represent 64 percent of the assigned 322X2C personnel, and the 375 respondents holding DAFSC 404X1 represent 73 percent of the assigned 404X1 personnel in the survey sample.

Table 2 reflects the paygrade group distribution, while Table 3 lists the sample distribution by TAFMS groups. The 322X2A has the most junior population with 79 percent in the grades E-1 through E-4. Over 50 percent of the other career ladders are also in the grades E-1 through E-4 (see Table 2). TAFMS distribution (Table 3) depicts a very inexperienced workforce as well. As reflected in these tables, the survey sample provides a very good representation of the assigned career ladder population.

TABLE 1

COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	AFS 322X2A		AFS 322X2C		AFS 404X1	
	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
TAC	49	45	54	50	54	53
SAC	25	27	20	22	13	12
USAFE	12	15	14	12	18	18
ATC	5	4	4	4	5	5
PACAF	7	7	8	12	8	8
AFSC	2	2	0	0	*	*
AAC	0	0	0	0	*	*
MAC	0	0	0	0	*	*
TOTAL	100	100	100	100	100***	100***

Total 322X2A Assigned - 304

Total in Sample - 209

Percent of Assigned in Sample - 68%

Total 404X1 Assigned - 516

Total 404X1 Surveys Returned - 375

Percent of Assigned in Sample - 73%

Total 322X2C Assigned - 300

Total 322X2C Surveys Returned - 193

Percent of Assigned in Sample - 64%

Total Assigned - 1,120

Total Eligible - 990

Total in Sample - 801

Percent of Assigned in Sample - 72%

Percent of Eligible in Sample - 81%

* Denotes less than one percent

** Excludes persons in PCS status, hospital, or less than six weeks on the job

*** Columns do not add up to 100% due to rounding

NOTE: Manning figures as of September 1982

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	AFS 322X2A*		AFS 322X2C*		AFS 404X1*	
	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AIRMEN	53	57	43	45	49	49
E-4	23	22	14	13	18	17
E-5	13	12	23	24	19	20
E-6	6	5	13	13	9	10
E-7	4	3	6	5	4	3
E-8	**	1	**	0	**	**

* Does not reflect 9-skill level personnel

** Indicates less than .5 percent

NOTE: Manning figures are as of September 1982

TABLE 3
TAFMS DISTRIBUTION OF SURVEY SAMPLE

<u>TAFMS (MONTHS)</u>	<u>PERCENT OF SAMPLE (AFS 322X2A)</u>	<u>PERCENT OF SAMPLE (AFS 322X2C)</u>	<u>PERCENT OF SAMPLE (AFS 404X1)</u>
1-48	72	53	58
49-96	12	13	19
97-144	7	16	10
145-192	3	10	7
193-240	3	7	5
241+	<u>2</u>	<u>1</u>	<u>1</u>
TOTAL	100	100	100

Task Factor Administration

In addition to completing the job inventory, selected senior 322X2A/C and 404X1 personnel were also asked to complete a second booklet for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets are processed separately from the job inventories. The rating information may then be used in a number of different analyses discussed in more detail within this report.

Task Difficulty. Each individual completing a task difficulty booklet was asked to rate all of the tasks on a 9-point scale (from extremely low to extremely high) as to the relative difficulty of each task in the inventory. Difficulty is defined as the length of time required by the average member to learn to do the task. Task difficulty data were independently collected from 49 experienced 7-skill level 322X2A/C and 404X1 personnel stationed worldwide, with all raters assessing the difficulty of all tasks in the inventory of which they have knowledge.

The interrater reliability (as assessed through components of variance of standard group means) for all respondents was .92, which suggests good agreement among the raters. Also, separate interrater reliability indexes were computed for the 12 322X2A, 9 322X2C and 18 404X1. These computations will be seen in a later section of this report.

Ratings were adjusted so tasks of average difficulty have ratings of 5.00 and a standard deviation of 1.00. To generate a Job Difficulty Index (JDI) for the different AFSC job groups, the aggregate ratings were used. The resulting data will be essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Job Difficulty Index (JDI). After computing the combined 322X2A/C and 404X1 task difficulty index for each task item, it was then possible to compute a Job Difficulty Index (JDI) for the job groups identified in the survey analysis. This index provides a relative measure of which jobs, when compared to other jobs identified, are more or less difficult. An equation using the number of tasks performed and the average difficulty per unit time spent (ADPUTS) as variables is used to generate the JDI. The index ranges from 1.0 for very easy jobs to 25.0 for very difficult jobs with an adjusted average of 13.00. This index predicts the relative difficulty as one means to compare and contrast Air Force jobs in these specialties. Very similar jobs in terms of difficulty could be classified together, while very different difficulty would suggest separate specialties.

Training Emphasis. A separate group of 42 senior technicians completed training emphasis booklets where they were asked to rate tasks on a 10-point scale from no training required to extremely heavy training required. Training emphasis is a rating of which tasks require structured training for first-term airmen. Structured training is defined as training provided at resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal OJT, or any other organized training method. Training emphasis data were independently collected from experienced 322X2A/C and 404X1 personnel stationed worldwide. Four separate interrater reliability indexes were then computed. These included the ratings given by respondents of all three career ladders combined and ratings for each career ladder separately as rated by the members of each specialty (8 AFS 322X2A raters, 12 AFS 322X2C raters, and 22 AFS 404X1 raters). The interrater reliability (as assessed through components of variance of standard group means) for all 42 raters was not acceptable due to insufficient agreements between the 322X2A/C and 404X1 raters, indicating different training needs for each individual ladder. Interrater reliability for both the 322X2A and C-shreds were extremely low. This could be a result of the low number of raters which completed TE booklets for each shred, or a result of different training policies or requirements within each shred. Because of the low interrater reliability in TE for the 322X2 shreds, the data obtained was not usable. The 404X1 interrater reliability was extremely high on the data obtained for this AFSC. Therefore, only 404X1 ratings will be used for an analysis of structured training for the field. In the 404X1 ladder, tasks rated high in training emphasis had ratings of 3.6 and above, with an average training emphasis rating of 1.8.

When used in conjunction with other factors, such as percent members performing, the task difficulty and training emphasis ratings can provide an insight into training requirements. This may help validate the lengthening or shortening of specific units of instruction in various training programs for the 404X1s. Structured training for the 322X2 A and C shreds will be analyzed in terms of percent members performing tasks.

SECTION I

CAREER LADDER STRUCTURE

In this particular project, the Avionic Sensor career ladder shredouts (AFSCs 322X2A, 322X2C) were surveyed to provide current task data and background information to review and update current training programs for the career ladder. AFSC 404X1, Aerospace Photographic Systems Repair career ladder, was of major concern because of the addition or introduction of Airborne Video Tape Recorders and Cockpit Television Video Systems (CTVS). The 404X1 personnel were previously oriented toward mechanical and optical systems only. Since the new systems require electronic and video repair skills, one of the main issues was to determine if personnel in the 404X1 career field are performing jobs similar enough to justify merger with the 322X2C career specialty, if they should have a separate shred, or remain status quo. These issues can best be addressed by examining how jobs in all three specialties relate to one another and how much similarity or commonality exists among and between jobs of the specialties. These relationships are determined through a computer analysis of job similarity using the comprehensive occupational data analysis program (CODAP), and are reported in some detail in this section.

CODAP consists of a series of computer programs which generate a number of statistical products used in the analysis of career ladders. The primary product used to analyze a career ladder structure is a hierarchical clustering of all jobs based on the similarity of tasks performed and relative time spent. Each individual job description in the sample (each person completing a job inventory) is compared to every other job description in terms of tasks in the job inventory. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to the initial groups, or new groups are formed, based on the similarity of tasks and time ratings in each individual job description. This procedure is continued until all individuals and groups are combined to form a single composite representing the total sample. This process permits identification of the major types of work being performed in the occupation (career ladder) and is analyzed in terms of the job description and background data of each type of job. This information is then used to examine the accuracy and completeness of career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standards) and to formulate an understanding of current utilization patterns.

The basic identifying groups used in the hierarchical job structuring process is the job type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing them. When there is a substantial degree of similarity between different job types, they are grouped together and labeled as a cluster. In many career fields, there are specialized job types too dissimilar to be grouped into any cluster. These unique groups are labeled independent job types (IJT).

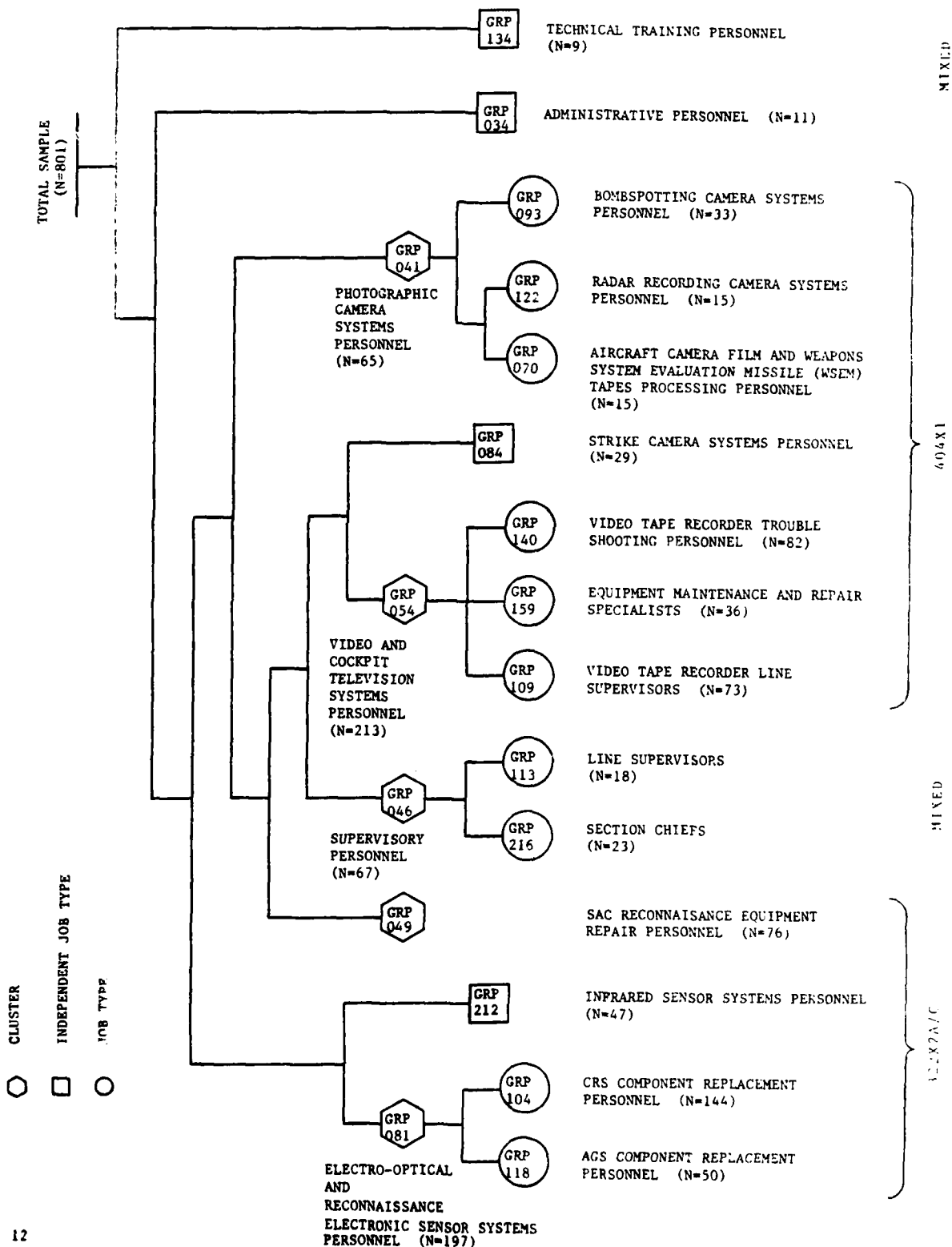
Based on the similarity of tasks performed, and the relative amount of time spent on each task, five clusters were identified. All clusters contain two or more job types. Where most of the individuals in a cluster are performing very similar tasks, then no subgroups (job types) are described; if some groups are performing some unique or different tasks, then subgroups are described separately. Also identified were four independent job types.

The job groups found within the 322X2A, 322X2C, and 404X1 survey sample are listed below and illustrated in Figure 1. The group (GRP) number shown beside each title is a reference to computer printouts provided to selected users. The letter N stands for the number of personnel in the group.

- I. ELECTRO-OPTICAL AND RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS PERSONNEL CLUSTER (GRP081, N=197)*
 - a. CRS Component Replacement Personnel (GRP104, N=144)
 - b. AGS Component Replacement Personnel (GRP118, N=50)
- II. INFRARED SENSOR SYSTEMS PERSONNEL (GRP212, N=47)
- III. SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL CLUSTER (GRP049, N=76)
- IV. VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL CLUSTER (GRP054, N=213)*
 - a. Video Tape Recorder Trouble Shooting Personnel (GRP140, N=82)
 - b. Equipment Maintenance and Repair Specialists (GRP159, N=36)
 - c. Video Tape Recorder Line Supervisors (GRP109, N=73)
- V. STRIKE CAMERA SYSTEMS PERSONNEL (GRP084, N=29)
- VI. PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL CLUSTER (GRP041, N=65)
 - a. Bombspotting Camera Systems Personnel (GRP093, N=33)
 - b. Radar Recording Camera Systems Personnel (GRP122, N=15)
 - c. Aircraft Camera Film and Weapons System Evaluation Missile (WSEM) Tapes Processing Personnel (GRP070, N=15)
- VII. SUPERVISORY PERSONNEL CLUSTER (GRP046, N=67)*
 - a. Section Chiefs (GRP216, N=23)
 - b. Line Supervisors (GRP113, N=18)
- VIII. TECHNICAL TRAINING PERSONNEL (GRP134, N=9)
- IX. ADMINISTRATIVE PERSONNEL (GRP034, N=11)

* Some of the individual's jobs are best described by the overall cluster job description.

FIGURE 1
CAREER LADDER STRUCTURE
(AFSCs 322X2A, 322X2C, AND 404X1)



Job Group Descriptions

The following paragraphs contain brief job descriptions of the clusters and independent job types identified through the career ladder structure analysis. Representative tasks for all clusters (as well as job types within clusters) and independent job types are contained in Appendix A.

1. ELECTRO-OPTICAL AND RECONNAISSANCE ELECTRONIC SENSOR SYSTEM PERSONNEL (GRP081, N=197). This cluster represents the largest group in the survey sample (31 percent). The cluster is primarily composed of two job types who work on the RF-4C aircraft; the first being CRS Component Replacement Personnel (which is primarily 322X2C shred) and the second being AGS Component Replacement Personnel (which is a mix of both A- and C-shred members). They perform an average of 169 tasks, highest of any group in the survey sample, and they have the highest job difficulty index (16.00) of the sample. Typical tasks include:

- removing or replacing infrared recorders
- operationally checking panoramic camera systems on aircraft
- removing and replacing infrared performance analyzers
- operating ground or external power units
- visually inspecting infrared systems

Electro-Optical and Reconnaissance Electronic Systems personnel average E-4 in grade, with 75 percent in their first enlistment. They average 44 months in the career field, with an average of 50 months in service.

Personnel in this cluster maintain a variety of both Electro-Optical and Reconnaissance Electronic Sensor systems. Over 75 percent maintained:

- AN/AAD-5 Infrared Reconnaissance Systems
- KA-56 Panoramic Camera Systems
- KA-91 Panoramic Camera Systems
- KS-87 Framing Camera Systems
- T-11 Mapping Camera Systems

Other systems maintained by substantial percentages of these personnel included:

- KF-17 Viewfinder Systems (73 percent)
- Viewfinders (70 percent)
- KD-29 Radar Recording Camera systems (46 percent)
- KC-1B (T-11 Mod) Mapping Camera (40 percent)

Two essentially different job groups were identified within this cluster. Both contained personnel who performed a broad spectrum of tasks on the flightline. Their primary tasks involve troubleshooting, removing, and replacing malfunctioning units on the aircraft. If a malfunction is found, it is removed and taken to the shop for repair, where the CRS group does more specific troubleshooting and repair. They are further described below.

a. CRS Component Replacement Personnel (GRP118, N=50). At least 84 percent of this group work in the shop. Fifty percent are assigned to TAC, 36 percent to PACAF, and 14 percent to USAFE. They are primarily C-shred personnel (with three being A-shred), and spend the majority of their job time maintaining, repairing, and adjusting a wide variety of systems. They perform an average of 254 tasks, making their job the broadest of any of the groups in the study. Typical tasks include:

- isolating malfunctions on printed circuit cards
- electrically adjusting viewfinders
- operationally checking viewfinder systems
- aligning or adjusting aircraft camera shutter mechanisms
- bench checking FC magazines

b. AGS Component Replacement Personnel (GRP104, N=144). Eighty-one percent of the members of this group are at TAC bases, while the rest are assigned to USAFE. This job type also contains 71 A- and 73 C-shred personnel. AGS personnel are involved with AN/AAS-18 infrared reconnaissance systems, the AN/ASQ-90 data display system, and the AN/ASQ-154 data display system. They work primarily on the flightline, and the majority of their job time is spent removing and replacing infrared and framing camera magazines and bodies, rather than performing actual repair tasks on these systems.

II. INFRARED SENSOR SYSTEMS PERSONNEL (GRP212, N=47). This group is composed entirely of 322X2A shop personnel. They spend the majority of their job time isolating malfunctions in, and repairing infrared sensor systems. They did not cluster with the electro-optical and Reconnaissance Electronic Sensor Systems Personnel (Cluster I above) because they do not maintain any electro-optical systems. Typical tasks include:

- aligning infrared receivers
- isolating malfunctions on infrared receivers
- removing or replacing infrared recorder components and sensor assemblies
- bench checking infrared recorders
- electrically adjusting infrared recorders

Ninety-four percent of the members maintain systems on RF-4C aircraft. The major systems maintained are the AN/AAD-5 infrared reconnaissance and AN/ASC-154 data display systems.

III. SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL (GRP049, N=76). This group included both side-looking radar personnel (A-shred) and electro-optical sensor systems repairmen (C-shred and 404X1). Due to the sensitive nature of the equipment, some specific systems and components maintained were not listed within the inventory; consequently, task responses by these individuals were general, referring primarily to such duties as performing general avionic sensor and photographic systems maintenance (Duty F) and maintaining side-looking radar (SLR) systems (Duty G). In view of the absence of specific equipment maintenance tasks, any comparisons of this group to other clusters and job types in terms of the number of tasks performed or of job difficulty index is inappropriate. As far as specific tasks performed, this group broke out differently from the others because they work almost exclusively with side-looking radar and reconnaissance sensor systems. They are responsible for the removal, repair, and replacement of these systems.

IV. VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL (GRP054, N=213). Members of this cluster primarily hold the 404X1 AFSC. Sixty percent are assigned to TAC. Cluster members spend 50 percent or more of their job time on 61 tasks related to video tape recorder equipment. They perform a large number of tasks (100 average) and the job difficulty index (JDI) is 14.00, which is above average. Typical tasks for the cluster include:

- bench checking airborne video tape recorders
- bench checking ground video tape recorders
- aligning or adjusting airborne video tape recorders
- isolating malfunctions on ground video recorder mechanical components
- operationally checking cockpit television video systems

Consisting primarily of 3- and 5-skill level personnel (20 and 63 percent), 60 percent are in their first enlistment, have an average grade of E-4, and the members' experience level is relative low (an average of only 40 months in the career field and 58 months in the service). Cross-trainees account for the spread difference between months in the career field and months in service. Some of the systems maintained by these personnel are:

- Sony CVM-195
- AN/AXQ-16V
- KB-25 Gun Camera
- KB-26 Gun Camera

Three job types were identified within this cluster and are discussed below.

a. Video Tape Recorder Trouble Shooting Personnel (GRP140, N=82). These members work primarily in component repair shops (CRS). Sixty percent are assigned to TAC, with the next largest concentration (23 percent) assigned to USAFE. Personnel maintain systems on the F-16, F-15, F-4, A-10, and AC-130 aircraft. Most of their trouble shooting is performed in the shop. Their primary function is to bench check and repair video tape recorder units. A large percentage of their job time includes isolating malfunctions on airborne video tape recorder mechanical or electronic components, and isolating malfunctions on cockpit television video systems.

b. Equipment Maintenance and Repair Specialists (GRP159, N=36). The majority of these personnel also work primarily in CRS. Sixty-nine percent are located at TAC bases, 17 percent are stationed within PACAF, and 14 percent are assigned to USAFE. Personnel maintain systems on the F-16, F-15, F-5, F-4, and A-10. Twenty-five percent or more of those responding maintained the KB-25 Gun Camera, V-1000AB-R TEAC, V-4200G-N TEAC, KB-26 Gun Camera, and KS-97 Radar Recording Camera systems. Their basic job is general in nature. They replace, lubricate, test, inspect, or isolate malfunctions on various systems to keep equipment operational. Members of this job group work with printed circuit cards, internal and external power units, cannon plugs, electronic control modules and other mechanical and electronic components. They do not specialize.

c. Video Tape Recorder Line Supervisors (GRP109, N=73). Members are dispersed throughout all commands, with the highest percentage (45 percent) belonging to TAC. They maintain systems on the F-16, F-15, F-5, F-4, RF-4C, B-52G, and B-52H. Twenty-five percent or more of those responding maintained the V-1000AB-R TEAC, V-4200G-N TEAC, AN/AXQ-16V, KB-25 Gun Camera, KB-26 Gun Camera, and KB-18 Strike Camera Systems. Members of this group are technical experts in the field. They not only supervise subordinates in the performance of their jobs, but as line supervisors also do much of the work themselves. They are fully qualified to operationally check, repair, or replace airborne video tape recorder units, and to supervise others in these areas. Fifty percent or more of their job time is spent supervising aerospace photographic systems specialists, removing or replacing video tape recorder systems on aircraft, and demonstrating how to locate technical information.

V. STRIKE CAMERA SYSTEMS PERSONNEL (GRP084, N=29). This group works primarily in CRS and spend 50 percent or more of their job time on 65 tasks relating specifically to strike camera systems. All members belong to the 404X1 career field. Typical tasks include:

- operationally checking strike camera systems on aircraft
- bench checking strike camera bodies
- visually inspecting strike camera systems
- uploading or downloading strike camera systems on aircraft
- testing strike camera systems using LS-83A test sets

VI. PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL (GRP041, N=65). This cluster of 404X1 personnel maintains gun camera, bombspotting camera, radar recording camera, and motion picture camera systems, as well as aircraft film and weapon systems evaluation missile (WSEM) tapes processing. Although they perform an average of 99 tasks, the majority of their job time is dedicated to radar recording camera systems. Typical tasks for this group include:

- operationally checking radar recording systems on aircraft
- bench checking radar recording camera bodies
- isolating malfunctions to radar recording camera magazines
- bench checking radar recording camera exposure frequency
- control boxes
- adjusting radar recording camera magazines

Sixty percent of the personnel are in their first enlistment and have an average grade of E-4. They average 57 months in the service, with only 38 months in the career field. Cross-trainees contributed toward this cluster being the second lowest in experience level.

The job types identified within this cluster perform similar duties and tasks; however, they spend the majority of their job time maintaining specific systems. They are described below.

a. Bombspotting Camera Systems Personnel (GRP093, N=33). All of the incumbents within this group are assigned to SAC bases. The majority of their job time is spent maintaining systems on the B-52G, B-52H, and B-52D bomber-type aircraft. Although they maintain other camera systems, such as the KS-32 radar recording camera and O-15 radar recording camera, the majority of the job involves the K-17 bombspotting camera system. Members perform such tasks as loading or unloading film in bombspotting camera magazines, operationally checking bombspotting systems on aircraft, adjusting bombspotting camera intervalometers, and removing and replacing bombspotting camera magazines.

b. Radar Recording Camera Systems Personnel (GRP122, N=15). As mentioned previously, many of the cluster respondents maintain radar recording camera systems; however, this is the group that spends the greater percentage of their job time maintaining this system. Another distinguishing characteristic of this group is that they perform maintenance mainly on F-4 aircraft (67 percent). Typical tasks include operationally checking radar recording systems in shop and on aircraft, visually inspecting radar recording systems in shop and on aircraft, visually inspecting radar recording camera systems, bench checking radar recording camera bodies, and isolating malfunctions to radar recording camera bodies.

c. Aircraft Camera Film and Weapons System Evaluation Missile (WSEM) Tapes Processing Personnel (GRP070, N=15). All members of this group are assigned to fighter interceptor squadrons within TAC. Incumbents in this group are trained to process the special films and tapes used by various aircraft camera systems. They are also tasked with cleaning and

maintaining the processors. Fifty percent or more of their job time is spent on 75 tasks, which include mixing film processing chemicals, cleaning WSEM tape processors, and cleaning, operating, and inspecting film processors.

VII. SUPERVISORY PERSONNEL CLUSTER (GRP046, N=67). The most senior group in the survey, these highly experienced members have the highest grade (E-6) of any group identified. All AFSCs are represented, with 75 percent of the total personnel holding the 7-skill level (12 percent 322X2A, 33 percent 322X2C, and 30 percent 404X1 personnel). They are dispersed throughout all commands, with the highest concentration (28 percent) stationed at SAC bases. Their average months in career field is 119 with 146 months in service. Representative tasks performed by this group include:

- planning work assignments
- scheduling work assignments
- counseling personnel on personal or military-related problems
- maintaining training records, charts, or graphs

Some supervisory personnel were included in other clusters and job types. However, a majority of those who spent substantial amounts of their work time on tasks within the supervisory duties of organizing and planning, directing and implementing, evaluating, and training were included within this cluster. Two job variations were identified and are described below.

a. Section Chiefs (GRP216, N=23). Members spend 50 percent of their job time on 77 tasks, which include interpreting policies, directives, or procedures for subordinates, assigning personnel to duty positions, and initiating punitive actions or recognition for commendable performance. They are also located throughout all commands, with the highest percentage (35 percent) belonging to TAC. Section chiefs are more administratively oriented than technically. They work in an office environment and do more managing than supervising of technical performance activities.

b. Line Supervisors (GRP113, N=18). They spend 50 percent or more of their time on 61 tasks, such as demonstrating how to locate technical information, conducting on-the-job training (OJT), and evaluating OJT trainees. Most working supervisors (68 percent) are stationed at SAC bases. Unlike the section chiefs, line supervisors have a direct working relationship with their subordinates. Members of this group guide workers in all technical aspects of their jobs.

VIII. TECHNICAL TRAINING PERSONNEL (GRP134, N=9). The primary job of these personnel is to train members entering the career field to the 3-skill level. Five of them are 404X1 personnel, two are 322X2A personnel,

and two are 322X2C personnel. All work strictly in a training school environment and are assigned to ATC. They have an average of 50 months in the career field and 57 months in services. Typical tasks include:

- conducting resident course classroom training
- developing training aids
- preparing lesson plans
- writing test questions
- counseling trainees on training progress

IX. ADMINISTRATIVE PERSONNEL (GRP034, N=11). Eighty-two percent of this group are in their first enlistment. They average 41 months in the career field and 50 months in service. Eight are 322X2C personnel, two are 404X1 personnel, and one is a 322X2A member. They perform an average of only 23 tasks (second lowest of all survey groups) and have the lowest JDI (3.00) of all survey groups. Typical tasks include:

- making entries on AF Forms 2005 (Issue/Turn In Request)
- locating part or stock numbers
- reviewing daily document registers
- performing safety inspections
- completing man-hour accounting records

They are distinguished by the fact that the majority of their job time is devoted to strictly administrative tasks, and that they are not involved in the more technical aspects of their AFSCs.

Job Satisfaction and Background Information on Job Groups

Two technical job groups, the electro-optical and reconnaissance electronic sensor systems, and SAC reconnaissance equipment repair, utilize both A- and C-shred personnel. This was mainly because MAJCOMs exercise certain options under maintenance directives as to which ladders will maintain certain systems. For instance, in aircraft generation squadrons (AGS), A-shred personnel were performing essentially the same jobs as C-shred personnel. Infrared sensor systems is comprised entirely of 322X2A personnel, and only one job group, CRS Component Replacement has all 322X2C personnel; and three of the technical clusters, video and cockpit television systems, strike camera systems, and photographic television systems, are entirely 404X1s.

Within the nontechnical groups, such as supervisory, technical training, and administrative job types, there was some overlap, but not a significant amount. Mostly, the personnel grouped together by virtue of common supervisory tasks performed on specific systems and they worked within their own AFS.

The most senior group was the supervisory cluster, with 146 months total active federal military service (TAFMS). SAC reconnaissance equipment repair and strike camera systems personnel both had the lowest average TAFMS with 43 months, respectively. The majority of the groups, with the exception of the supervisory cluster and video cockpit television systems cluster, had high percentages of personnel in their first enlistment (see Table 4).

Wide variations were noted in job attitudes of members in the clusters and independent job types (refer to Table 5). Job attitudes for functional job types within the clusters are detailed in Table 6. The highest percentages with positive responses were noted among the more senior groups. Supervisory personnel responded more positively, with 85 percent indicating their job used their talents well, 72 percent finding their job interesting, and 70 percent perceiving their training as being utilized well. Eighty-one percent of them planned on reenlisting. The highest reenlistment response, however, was from the video cockpit television systems personnel, which had 88 percent stating positive reenlistment intentions. Seventy-two percent of the photographic camera systems personnel planned on reenlisting, while the remaining six groups, technical training (67 percent). Strike camera systems (65 percent), SAC reconnaissance equipment repair (60 percent), electro-optical and reconnaissance electronic sensor system (57 percent), all had somewhat low percentages of personnel desiring to positively reenlist.

The group with the lowest percentages of overall job satisfaction responses was the administrative personnel independent job type, a group performing only a few tasks and an extremely low JDI (3.00), as shown earlier in Table 4. Seventy-three percent felt their training was not being utilized, 54 percent felt their talents were not being utilized, and only 36 percent found their job interesting, which probably reflects the narrow job they perform. Two other groups were also low in those areas. Fifty-two percent of the Strike Camera Systems cluster felt their talents were not being utilized, and only 52 percent found their job interesting and felt their training was being utilized, and only 51 percent found their job interesting. There are no apparent reasons for these differences in job satisfaction indicators. A review of write-in comments and discussion with career field members failed to provide any consistent trends.

Another way to compare the functional job types is by examining the relative difficulty of the jobs. The Job Difficulty Index (JDI) for each job is displayed in Table 7, along with the average number of tasks performed by each group. The most difficult jobs are Infrared Sensor Personnel (all 322X2A) and Electro-Optical and Reconnaissance Electronic Sensor Systems (mixed 322X2A and C). Video and Cockpit TV Systems (all 404X1) is also above average difficulty but other 404X1 jobs (Photographic Cameras and Strike Cameras) are slightly below average difficulty. One A-shred job (SAC Reconnaissance Equipment) is also relatively less difficult. Thus, the various AFSC-specific jobs are mixed across the range of job difficulty.

Table 8 provides selected background data for job types within the four clusters, including percent in job type (group), total sample, continental United States (CONUS), and overseas. It also supplies DAFSC distribution by job types and other important information. By comparing job types across the table, differences in demographics can be observed.

Much of this information confirms the trends mentioned earlier. One job type, however, should be noted; the CRS Component Replacement Personnel (GRP118) is composed mostly of C-shred personnel and has a very high JDI (21), with an average of 254 tasks performed. Thus, this CRS Component Replacement group has an extremely broad job.

As can be seen in Table 8, AGS Component Replacement Personnel (GRP104) seem to have the largest degree of overlap between the 322X2A and C-shreds. Fifty percent of the members of this cluster are A-shred, while 46 percent are C-shred. (Figures do not add to 100 percent due to rounding.) AGS Component Replacement Personnel are also the largest cluster in the survey, accounting for 18 percent of the total sample. Overlap also occurs in the supervisory cluster but, here, overlap is expected. The following sections will compare jobs of the three AFSCs and examine areas such as training, TAFMS, and MAJCOM differences for each specialty separately.

TABLE 4
SELECTED BACKGROUND DATA FOR CLUSTERS AND INDEPENDENT JOB TYPES*

	ELECTRO- OPTICAL AND RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS PERSONNEL (GRP081)		SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL (GRP212)		VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL (GRP054)		STRIKE CAMERA SYSTEMS PERSONNEL (GRP084)		PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL (GRP041)		SUPERVISORY PERSONNEL (GRP046)		TECHNICAL TRAINING PERSONNEL (GRP134)		ADMINISTRATIVE PERSONNEL (GRP034)	
	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:	NUMBER IN GROUP:	PERCENT IN TOTAL SAMPLE:
	197	31%	47	6%	213	27%	29	4%	65	8%	67	8%	9	1%	11	1%
	69%		57%		36%		35%		91%		67%		100%		91%	
	31%		40%		64%		65%		9%		33%		0%		9%	
DAFSC DISTRIBUTION:																
32232A	15%		28%		0%		0%		0%		1%		11%		9%	
32252A	30%		58%		0%		0%		0%		9%		11%		0%	
32272A	5%		14%		0%		0%		0%		12%		0%		0%	
32232C	4%		0%		0%		0%		0%		0%		0%		9%	
32252C	33%		0%		0%		0%		0%		7%		22%		55%	
32272C	10%		0%		0%		0%		0%		33%		0%		9%	
40431	0%		0%		19%		38%		11%		2%		11%		0%	
40451	0%		0%		65%		48%		69%		5%		22%		18%	
40471	0%		0%		16%		14%		20%		30%		22%		0%	
AVERAGE GRADE:																
AVERAGE MONTHS IN CAREER FIELD:	E-4		E-4		E-4		E-4		E-4		E-6		E-4		E-3	
AVERAGE MONTHS IN SERVICE:	44		37		41		32		38		119		50		41	
	50		45		60		43		57		146		57		50	
PERCENT IN FIRST ENLISTMENT:																
PERCENT SUPERVISING:	75%		81%		57%		79%		60%		13%		44%		82%	
AVERAGE NUMBER OF TASKS PERFORMED:	27%		36%		39%		34%		32%		75%		32%		27%	
JOB DIFFICULTY INDEX (JDI)	169		147		101		96		99		96		18		23	
(AVERAGE JDI=13.00)	16		17		14		10		11		13		8		3	

*Columns may not add up to 100 percent due to rounding or nonresponse

TABLE 5
COMPARISON OF JOB SATISFACTION INDICATORS BY CAREER LADDER CLUSTERS AND INDEPENDENT JOB TYPES
(PERCENT MEMBERS PERFORMING)*

	ELECTRO- OPTICAL AND RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS PERSONNEL (GRP081)	INFRARED SENSOR SYSTEMS PERSONNEL (GRP212)	SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL (GRP049)	VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL (GRP054)	STRIKE CAMERA SYSTEMS PERSONNEL (GRP084)	PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL (GRP041)	SUPERVISORY PERSONNEL (GRP046)	TECHNICAL TRAINING PERSONNEL (GRP134)	ADMINISTRATIVE PERSONNEL (GRP034)
EXPRESSED JOB INTEREST:									
DULL	13	11	14	13	38	26	13	22	36
SO-SO	18	11	20	25	10	23	15	11	27
INTERESTING	69	78	66	62	52	51	72	67	36
PERCEIVED UTILIZATION OF TALENTS:									
LITTLE OR NOT AT ALL	26	15	24	25	52	52	15	33	54
FAIRLY WELL TO PERFECTLY	74	85	76	75	48	48	85	67	46
PERCEIVED UTILIZATION OF TRAINING:									
LITTLE OR NOT AT ALL	31	21	34	38	48	40	30	33	73
FAIRLY WELL TO PERFECTLY	69	77	66	62	52	60	70	67	27
REENLISTMENT INTENTIONS:									
RETIRE	2	2	0	0	0	3	10	0	9
NO, PROBABLY NO	41	45	40	12	35	25	9	33	36
YES, PROBABLY YES	57	53	60	88	65	72	81	67	55

* Columns may not add to 100 percent due to no response or rounding

TABLE 6

JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING
FOR PERSONNEL WITHIN FUNCTIONAL JOB TYPE GROUPS

	CRS COMPONENT REPLACEMENT PERSONNEL (GRP118)	AGS COMPONENT REPLACEMENT PERSONNEL (GRP104)	VIDEO TAPE RECORDER TROUBLE- SHOOTING PERSONNEL (GRP140)	EQUIPMENT MAINTENANCE AND REPAIR SPECIALISTS (GRP159)	VIDEO TAPE RECORDER LINE SUPERVISORS (GRP109)
<u>EXPRESSED JOB INTEREST:</u>					
DULL	8	16	5	8	12
SO-SO	12	22	16	31	14
INTERESTING	80	62	78	61	71
<u>PERCEIVED UTILIZATION OF TALENTS:</u>					
LITTLE OR NOT AT ALL	12	34	15	31	21
FAIRLY WELL TO PERFECTLY	88	66	85	69	77
<u>PERCEIVED UTILIZATION OF TRAINING:</u>					
LITTLE OR NOT AT ALL	8	43	40	25	23
FAIRLY WELL TO PERFECTLY	92	57	60	75	75
<u>REENLISTMENT INTENTIONS:</u>					
RETIRE	26	2	0	3	6
NO, PROBABLY NO	8	43	38	42	25
YES, PROBABLY YES	66	54	61	55	69

* Columns may not add up to 100 percent due to rounding or nonresponses

TABLE 6 (CONTINUED)

JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING
FOR PERSONNEL WITHIN FUNCTIONAL JOB TYPE GROUPS

	BOMBSPOTTING CAMERA SYSTEMS PERSONNEL (GRP093)	RADAR RECORDING CAMERA SYSTEMS PERSONNEL (GRP122)	AIRCRAFT CAMERA FILM AND WEAPONS SYSTEM EVALUATION MISSILE (WSEM) TAPES PROCESSING PERSONNEL (GRP070)	SECTION CHIEFS (GRP216)	LINE SUPERVISORS (GRP113)
EXPRESS JOB INTEREST:					
DULL	30	33	13	9	6
SO-SO	24	20	13	17	11
INTERESTING	46	47	73	74	83
PERCEIVED UTILIZATION OF TALENTS:					
LITTLE OR NOT AT ALL	46	60	60	13	11
FAIRLY WELL TO PERFECTLY	54	40	40	87	89
PERCEIVED UTILIZATION OF TRAINING:					
LITTLE OR NOT AT ALL	24	60	53	39	22
FAIRLY WELL TO PERFECTLY	76	40	47	61	78
REENLISTMENT INTENTIONS:					
RETIRE	6	0	0	17	17
NO, PROBABLY NO	18	33	27	9	0
YES, PROBABLY YES	76	67	73	74	83

* Columns may not add up to 100 percent due to rounding or nonresponses

TABLE 7
JOB DIFFICULTY INDEX VALUES FOR JOB GROUPS
(IN ORDER OF JDI)

<u>CLUSTERS AND INDEPENDENT JOB GROUPS</u>	<u>JDI</u>	<u>AVERAGE NUMBER OF TASKS PERFORMED</u>
INFRARED SENSOR SYSTEMS PERSONNEL (GRP212, N=47)	17	147
ELECTRO-OPTICAL AND RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS PERSONNEL CLUSTER (GRP081, N=197)	16	169
VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL (GRP054, N=213)	14	101
SUPERVISORY PERSONNEL CLUSTER (GRP046, N=67)	13	96
PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL CLUSTER (GRP041, N=65)	11	99
SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL (GRP049, N=76)	10	67
STRIKE CAMERA SYSTEMS PERSONNEL (GRP084, N=29)	10	96
TECHNICAL TRAINING PERSONNEL (GRP134, N=9)	8	18
ADMINISTRATIVE PERSONNEL (GRP034, N=11)	3	23

Average JDI = 13.0

TABLE 8

SELECTED BACKGROUND DATA FOR FUNCTIONAL JOB TYPE GROUPS

CLUSTER (GRP041)							CLUSTER (GRP046)	
BOMBSPOTTING CAMERA SYSTEMS PERSONNEL (GRP093)		RADAR RECORDING CAMERA SYSTEMS PERSONNEL (GRP122)		AIRCRAFT CAMERA FILM AND WEAPONS SYSTEM EVALUATION MISSILE (WSEM) TAPES PROCESSING PERSONNEL (GRP070)		SECTION CHIEFS (GRP216)	LINE SUPERVISORS (GRP113)	
NUMBER IN GROUP:							23	18
PERCENT IN TOTAL SAMPLE:							3%	2%
PERCENT IN CONUS:							65%	50%
PERCENT OVERSEAS:							35%	50%
DAFSC DISTRIBUTION:								
32232A	0%	0%	0%	0%	0%	0%	0%	
32252A	0%	0%	0%	0%	0%	9%	5%	
32272A	0%	0%	0%	0%	0%	17%	11%	
32232C	0%	0%	0%	0%	0%	0%	0%	
32252C	0%	0%	0%	0%	0%	0%	17%	
32272C	0%	0%	0%	0%	0%	30%	61%	
40431	0%	20%	13%	13%	4%	0%	0%	
40451	97%	73%	73%	73%	0%	0%	6%	
40471	3%	7%	13%	13%	39%	0%	0%	
AVERAGE GRADE:								
AVERAGE MONTHS IN CAREER FIELD:		E-4	E-4	E-4	E-6	E-5		
AVERAGE MONTHS IN SERVICE:		51	16	36	142	92		
		66	43	54	178	116		
PERCENT IN FIRST ENLISTMENT:								
PERCENT SUPERVISING:		55%	60%	53%	4%	22%		
AVERAGE NUMBER OF TASKS PERFORMED:		4%	27%	33%	70%	78%		
JOB DIFFICULTY INDEX (JDI)		123	65	87	109	124		
(AVERAGE JDI = 13.00):		13	8	10	15	14		

TABLE 8 (CONTINUED)
SELECTED BACKGROUND DATA FOR FUNCTIONAL JOB TYPE GROUPS

	CLUSTER (GRP081)		CLUSTER (GRP054)		
	CRS COMPONENT REPLACEMENT PERSONNEL (GRP118)	AGS COMPONENT REPLACEMENT PERSONNEL (GRP104)	VIDEO TAPE RECORDER TROUBLE- SHOOTING PERSONNEL (GRP140)	EQUIPMENT MAINTENANCE AND REPAIR SPECIALISTS (GRP159)	VIDEO TAPE RECORDER LINE SUPERVISORS (GRP109)
NUMBER IN GROUP:	50	144	82	36	73
PERCENT IN TOTAL SAMPLE:	6%	18%	10%	4%	9%
PERCENT IN CONUS:	50%	82%	68%	69%	56%
PERCENT OVERSEAS:	50%	18%	32%	31%	44%

DAFSC DISTRIBUTION:

32232A	6%	15%	0%	0%	0%
32252A	0%	31%	0%	0%	0%
32272A	0%	3%	0%	0%	1%
32232C	0%	6%	0%	0%	0%
32252C	60%	36%	0%	0%	3%
32272C	32%	4%	0%	0%	0%
40431	0%	0%	24%	25%	1%
40451	0%	0%	72%	69%	59%
40471	0%	0%	2%	6%	36%

AVERAGE GRADE:

AVERAGE MONTHS IN CAREER FIELD:	E-4	E-4	E-3	E-4	E-5
AVERAGE MONTHS IN SERVICE:	56	40	21	15	72
	64	43	28	29	103

PERCENT IN FIRST ENLISTMENT:

PERCENT SUPERVISING:	64%	78%	84%	78%	18%
AVERAGE NUMBER OF TASKS PERFORMED:	36%	25%	13%	22%	81%
JOB DIFFICULTY INDEX (JDI)	254	151	68	110	153
(AVERAGE JDI = 13.00):	21	15	12	12	17

SECTION II

GENERAL SPECIALTY COMPARISONS

After evaluating specific jobs performed by the three AFSCs, it is also useful to compare and contrast the data summarized for each specialty to determine what similarities or differences, if any, exist. It is particularly important in this study because of the need to examine the possibility for a merger of the 404X1s with the 322X2Cs, or for the 404X1s to become a new shred of the 322 AFS.

Similarities: Members of all three AFSCs (322X2A, 322X2C, and 404X1) share a common core of tasks. These tasks (examples are displayed in Table 9) were expected to be performed in common and, thus, were organized as General Avionic Sensor and Photographic Systems Maintenance (Duty F). The tasks of the common core seems to be the major area of overlap and cross utilization between the AFSCs. Duty F tasks are not unique to any system; they are extremely general in nature as can be seen in Table 9, for instance task F249 in the table is "Remove or replace light bulbs, fuses, or circuit breakers". This task may be performed by anyone, even members of other AFSCs not included in this study. Similarities involving the 404X1 AFSC basically end with Duty F related tasks, however, the two shreds of the 322 AFS share a number of tasks beyond the general tasks in Duty F. Examples of tasks common to both the 322X2A- and C-shreds are listed in Table 10 to show their overlap. In addition to these tasks, there are a number of tasks where the percentages are different between the shreds (and the 404X1 as well). Examples of such varying tasks are shown in Table 11 to illustrate the differences which do exist.

The amount of time spent on various systems is another way to evaluate specialty differences. As Figure 2 displays, the overlap of work time is mostly between the 322X2A and 322X2C AFSCs. Examples of this overlap of A and C shredouts can be seen in side-looking radar, infrared, data display and most of the other systems in the figure. Overlap involving the 404X1 can only be found in two systems, radar recording camera and cockpit TV systems, both of which involve only 1 percent of work time; there is also some overlap (1-2 percent) in cross utilization tasks with other flightline specialties.

The large core of general tasks shared by the three AFSCs, the similarity of tasks which exists between the A- and C-shreds of the 322X2, and the overlap of time spent on some systems, as displayed in Figure 2, accounts for most of the commonality found between the three AFSCs.

Differences: Figure 2 also displays the differences that exist in duty time spent on various systems, by the three AFSCs. The greatest difference can be seen between the 404X1s and the two shreds of the 322X2. In most areas the 404X1s spend less than one percent of their time on these duties. It is also apparent from the figure that those duties which are performed by 404X1s are performed either in very small numbers, or not at all by the 322X2A- and C-shreds.

There are also differences in tasks performed by the three AFSCs as displayed in Table 11. The boxed areas in this table show which of the three AFSCs has the highest percent of members performing the associated task, and which have the lowest. Note in the table that tasks 1-5, 11-15, and 21-25 are tasks which are unique to each of the three AFSCs. Also note, as stated earlier in similarities, that the 404X1s share very little with the 322-shreds other than the Duty F tasks displayed in Table 9.

Summary

Some areas of commonality were found between the three ladders. The main source of this commonality is the performance of general avionic sensor and photographic systems maintenance tasks. Overlap of both tasks performed and systems maintained, continues to exist between the two shreds of the 322X2 beyond just the general tasks. While this overlap between the shreds is obvious (as was seen Table 10), there are also some obvious task differences even with tasks relating to the same system. For instance, the first five tasks in Table 11 are unique to the 322X2As and are related to infrared (IR) sensor systems; tasks six through 10 are common to the A- and C-shreds, yet these tasks are also related to IR. What this demonstrates is, while both shreds of the 322 AFS are performing tasks associated with the same system (in this example IR), they are not always performing the same function on the system. Thus, there is overlap between the two shreds on IR, and there is still uniqueness on IR tasks performed by the 322X2As. The 322X2Cs perform unique tasks on motion picture and panoramic cameras (Tasks 11 through 15), yet share tasks 16 through 20 with the A-shred. The 404X1s have almost no system-specific tasks overlap with either of the 322 shreds.

Write-in comments from personnel in the field did not reflect any trends as far as complaints are concerned. However, Table 12 (COMPARISON OF JOB SATISFACTION INDICATORS BY 322X2A, 322X2C, AND 404X1 TAFMS GROUPS) points out that one-third of all personnel across all TAFMS groups are disgruntled about utilization of their training. This dissatisfaction shows a need for further review by career field managers. Also, one-fourth of all personnel, from entry-level to supervisors, do not feel their talents are being utilized. These perceptions may account for the decline in 7-skill level resources. Although reenlistment figures have improved for each of the career ladders since their last surveys, there is higher expected attrition in the 1-48 months TAFMS groups in the 322X2C and 404X1 career fields, based on their stated intent to reenlist. If some merger becomes necessary, the most logical course of action would be to make the current 404X1 a separate shredout within the 322X2 area. Separate analyses for each of the three AFSCs will be discussed in the following sections.

TABLE 9

EXAMPLES OF TASKS COMMON TO ALL THREE SPECIALTIES

TASKS	PERCENT MEMBERS PERFORMING		
	322X2A	322X2C	404X1
F189 ADJUST ELECTRICAL COMPONENTS OTHER THAN ON PRINTED CIRCUIT CARDS	23	28	31
F191 ADJUST VOLTAGES IN POWER SUPPLIES	36	28	34
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	31	36	43
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	52	52	57
F225 OPERATE AIRCRAFT POWER UNITS	40	30	50
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	58	50	71
F227 PACK OR UNPACK EQUIPMENT	58	60	63
F232 PERFORM VOLTAGE CHECKS	73	72	65
F236 RAISE OR LOWER AIRCRAFT CANOPIES	68	56	67
F237 READ OR INTERPRET WIRING DIAGRAMS	77	77	70
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	69	56	67
F246 REMOVE OR REPLACE ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS OTHER THAN ON PRINTED CIRCUIT CARDS	23	25	29
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	74	81	61
F255 REMOVE OR REPLACE TOGGLE OR PUSH-PULL SWITCHES	21	26	28
F266 TRACE AIRCRAFT WIRING SYSTEMS	44	45	52

TABLE 10

EXAMPLES OF TASKS COMMON JUST TO THE A & C SHREDS

TASKS	PERCENT MEMBERS PERFORMING	
	322X2A	322X2C
H362 EVALUATE FILM FOR IR SYSTEM MALFUNCTIONS	41	26
H373 OPERATIONALLY CHECK IR CONTROL PANELS	47	33
H375 OPERATIONALLY CHECK IR MAGAZINES	52	34
H378 OPERATIONALLY CHECK IR RECORDERS	48	34
H379 OPERATIONALLY CHECK IRPAS	49	34
H386 REMOVE OR REPLACE IR CRYOGENIC REFRIGERATORS	59	45
H392 REMOVE OR REPLACE IR MAGAZINES	63	49
H405 REMOVE OR REPLACE IRPAS	57	45
H406 VISUALLY INSPECT IR SYSTEMS	58	44
I418 REMOVE OR REPLACE DDS CONVERTERS	53	34
J451 OPERATIONALLY CHECK FC SYSTEMS ON AIRCRAFT	34	42
J455 REMOVE OR REPLACE FC BODIES	38	50
K458 REMOVE OR REPLACE FC CASSETTES	36	52
J467 VISUALLY INSPECT FC SYSTEMS	37	48
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	31	62
M541 REMOVE OR REPLACE MC BODIES	33	59
N582 OPERATIONALLY CHECK PC SYSTEMS ON AIRCRAFT	33	49
N583 PERFORM DARKROOM PROCEDURES ON PC CASSETTES	29	45
N590 REMOVE OR REPLACE PC CASSETTES	30	57

TABLE 11

EXAMPLES OF TASK DIFFERENCES AND SIMILARITIES
ACROSS AFSCs

TASKS	PERCENT MEMBERS PERFORMING		
	322X2A	322X2C	404X1
1 BENCH CHECK IR CRYOGENIC REFRIGERATORS	28	0	0
2 BENCH CHECK IR RECEIVERS	27	0	0
3 ELECTRICALLY ADJUST IR RECEIVERS	26	0	0
4 REMOVE OR REPLACE IR RECORDER COMPONENTS	26	0	0
5 REMOVE OR REPLACE SLR SYNCHRONIZERS	23	0	0
6 VISUALLY INSPECT IR SYSTEMS	58	44	0
7 REMOVE OR REPLACE IR CONTROL INDICATORS	57	32	1
8 OPERATIONALLY CHECK IR MAGAZINES	52	34	0
9 OPERATIONALLY CHECK IR CRYOGENIC REFRIGERATORS	50	32	0
10 OPERATIONALLY CHECK IR CONROL PANELS	47	33	0
11 VISUALLY INSPECT VIEWFINDER SYSTEMS	0	65	0
12 VISUALLY INSPECT MC SYSTEMS	0	58	0
13 REMOVE OR REPLACE PC CASSETTES	0	57	0
14 REMOVE OR REPLACE MC SYSTEMS	0	51	0
15 PERFORM DARKROOM PROCEDURES ON PC CASSETTES	0	45	0
16 ISOLATE MALFUNCTIONS TO PC MAGAZINES	26	46	1
17 ISOLATE MALFUNCTIONS TO PC SYSTEMS	26	46	1
18 ISOLATE MALFUNCTIONS TO PC CASSETTES	23	44	1
19 REMOVE OR REPLACE MC BODIES	33	59	2
20 OPERATIONALLY CHECK MC BODIES	27	58	1
21 BENCH CHECK TV RECEIVERS OR MONITORS	0	0	43
22 ASSEMBLE OR DISASSEMBLE TV RECEIVERS OR MONITORS	0	0	39
23 MAINTAINING GUN CAMERA (GC) SYSTEMS	0	0	32
24 REMOVE OR REPLACE GC BODIES	0	0	26
25 REMOVE OR REPLACE GC MOTOR MODULES	0	0	23

TABLE 12

COMPARISON OF JOB SATISFACTION INDICATORS BY 322X2A, 322X2C, AND 404X1 TAFMS
(PERCENT MEMBERS RESPONDING)*

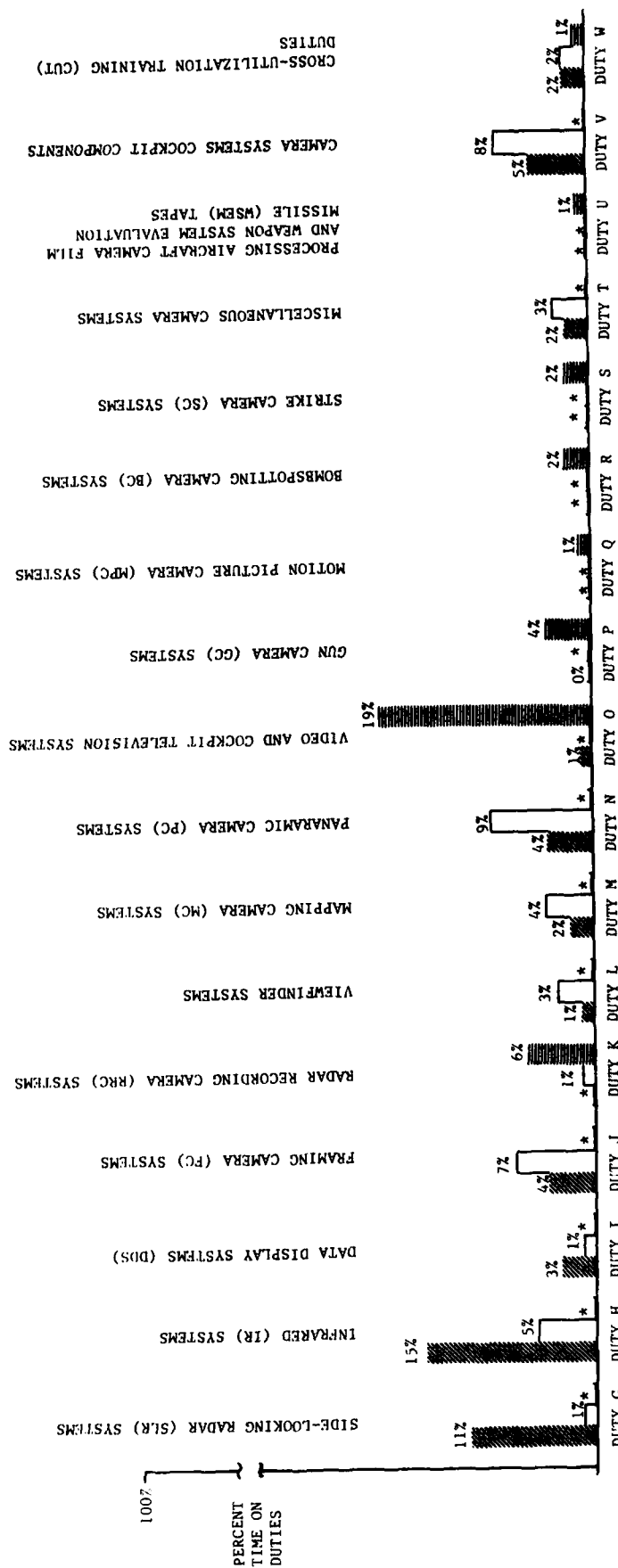
UPS

	1-48 MONTHS TAFMS		404X1 (N=215)	49-96 MONTHS TAFMS		404X1 (N=68)	97+ MONTHS TAFMS		
	322X2A (N=151)	322X2C (N=103)		322X2A (N=24)	322X2C (N=25)		322X2A (N=31)	322X2C (N=65)	404X1 (N=87)
<u>EXPRESSED JOB INTEREST:</u>									
DULL	12	18	21	25	20	12	10	8	14
SO-SO	20	16	20	17	20	18	22	15	17
INTERESTING	68	66	58	58	60	69	68	77	69
<u>PERCEIVED UTILIZATION OF TALENT:</u>									
LITTLE OR NOT AT ALL	25	25	37	26	28	22	20	21	31
FAIRLY WELL TO PERFECTLY	75	74	63	74	72	75	80	79	69
<u>PERCEIVED UTILIZATION OF TRAINING:</u>									
LITTLE OR NOT AT ALL	32	38	39	29	52	29	33	31	37
FAIRLY WELL TO PERFECTLY	68	61	60	71	48	69	67	69	63
<u>REENLISTMENT INTENTIONS:</u>									
NO, OR PROBABLY NO	29	48	40	29	20	32	13	19	23
YES, OR PROBABLY YES	71	52	59	71	80	68	87	80	76

* May not total 100 percent due to nonresponses or rounding

FIGURE 2

COMPARISON OF AVERAGE PERCENT TIME SPENT ON TECHNICAL DUTIES BY 322X2A, 322X2C, AND 404X1 PERSONNEL



- TIME SPENT ON DUTIES BY 322X2A PERSONNEL
- TIME SPENT ON DUTIES BY 322X2C PERSONNEL
- TIME SPENT ON DUTIES BY 404X1 PERSONNEL
- * LESS THAN .05 PERCENT

SECTION III

ANALYSIS OF 322X2A DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with that of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis is performed to identify differences across and between skill levels. It is also used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS) reflect what career ladder personnel are actually doing in the field.

Three- and 5-skill level members were found to be performing essentially the same tasks, had basically the same average number of tasks, and were spending a similar amount of time on the tasks performed. Therefore, they will be discussed as one group.

Skill Level Descriptions

DAFSCs 32232A/32252A (N=176). Members of this group represent 84 percent of the 322X2A sample, with an average of 59 months TAFMS. Personnel perform most of the technical tasks pertaining to the field, with the greatest percentage performing tasks directly related to general avionic sensor and photographic systems maintenance. Typical tasks are:

- visually inspecting line replaceable units (LRU)
- safety-wiring equipment
- reading or interpreting wiring diagrams
- performing voltage checks
- removing or replacing light bulbs, fuses, or circuit breakers

Table 13 lists 25 tasks, with 50 percent or more members performing, at the 3-/5-skill level. Note that many of the tasks are general avionic sensor and photographic systems maintenance (Duty F). These general maintenance tasks, along with administrative tasks (maintenance management, forms) represent the common core of most 32232A/52A jobs. The more technical tasks involving specific systems are typically performed by smaller percentages which reflects the diversity of technical jobs discussed earlier (in the Career Ladder Structure Section).

Since the bulk of the career field are 3-/5-skill level personnel (84 percent), a certain percentage perform tasks that are usually performed only by senior NCOs. Table 14 displays supervisory tasks that support this finding. As the table displays, however, the percent of members performing supervisory tasks are much lower than those performing tasks of a more technical nature. The fact that 5-skill level personnel, presumably the more senior ones, are supervising and training others reflects a shortage of 7-level technicians (only 16 percent of the total 322X2A sample).

DAFSC 32272A (N=33). At the 7-skill level, some personnel still perform many of the technical tasks relating to the field; however, as should be expected, the greatest percentage of their time is spent on supervisory and managerial tasks. One finding that normally should not be found at this skill level is the small amount of resident training being done by 7-skill level personnel. While the percent of members performing training tasks would initially indicate that a large amount of senior personnel are performing this function, a closer look at these tasks and the time spent on them shows that the greater percentage are performing OJT and not formal training (i.e., technical school). At the time this survey was administered, only one 3-level, one 7-level, and one civilian were performing training duties at the technical school for this AFSC.

Table 15 lists examples of tasks performed by 7-skill level personnel. The average number of tasks performed is 118, and 50 percent of their time is spent on 90 tasks. Typical supervisory tasks include:

- writing APRs
- visually inspecting egress inspections for safety
- reading or interpreting wiring diagrams
- conducting OJT
- inspecting facilities or work areas for condition or appearance

Summary

While 3-/5 and 7-skill level members perform a large number of tasks that are technical in nature, it is clear from the data that 7-skill level personnel have a much higher percent performing and spend more time on supervisory and managerial tasks. This is displayed in Table 16. As noted earlier, however, members below the 7-skill level are performing some supervisory and managerial tasks. The relatively few 7-skill level personnel available may not be a sufficient resource to provide all of the technical guidance, OJT, and advanced technical work (troubleshooting, etc.) needed for this diverse specialty.

TABLE 13

EXAMPLES OF THE TASKS PERFORMED BY DAFSC 32232A AND 32252A PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=176)
F258 SAFETY-WIRE EQUIPMENT	84
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	81
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	78
F237 READ OR INTERPRET WIRING DIAGRAMS	77
E153 LOCATE PART OR STOCK NUMBERS	74
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	74
F232 PERFORM VOLTAGE CHECKS	73
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	72
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	71
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	70
F259 SALVAGE WASTE FILM	69
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	69
F236 RAISE OR LOWER AIRCRAFT CANOPIES	68
F254 REMOVE OR REPLACE SYSTEM MOUNTS ON AIRCRAFT	64
F267 VISUALLY INSPECT COCKPIT PANELS	64
H392 REMOVE OR REPLACE INFRARED (IR) MAGAZINES	62
F235 PURGE COOLANT SYSTEMS	60
H402 REMOVE OR REPLACE IR SYSTEMS	60
H398 REMOVE OR REPLACE IR RECEIVERS	60
H393 REMOVE OR REPLACE IR POWER SUPPLIES	60
F270 VISUALLY INSPECT MISSION BAYS	59
H400 REMOVE OR REPLACE IR RECORDERS	59
F248 REMOVE OR REPLACE JUNCTION BOXES	57
H383 REMOVE OR REPLACE IR CONTROL INDICATORS	57
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	52

Average Number of Tasks Performed = 114

TABLE 14

EXAMPLES OF SUPERVISORY, MANAGERIAL, AND TRAINING TASKS
PERFORMED BY FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=151)
43 DIRECT OR PARTICIPATE IN MOBILITY EXERCISES	35
B62 SUPERVISE APPRENTICE RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS SPECIALIST (32232A)	28
D122 DEMONSTRATE OPERATION OF EQUIPMENT	28
C100 PROVIDE TECHNICAL ASSISTANCE FOR JOB-RELATED PROBLEMS ENCOUNTERED BY SUBORDINATES	25
A8 DETERMINE WORK PRIORITIES	22
B52 INVENTORY EQUIPMENT, SUPPLIES, OR TOOLS OTHER THAN CONSOLIDATED TOOL KITS (CTK)	15
A18 ESTABLISH WORK PRIORITIES	15
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	13
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	13
B66 SUPERVISE RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS SPECIALIST (32252A)	13
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	12
C93 INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	12
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	11
B61 SUPERVISE APPRENTICE ELECTRO-OPTICAL SENSOR SYSTEMS SPECIALIST (AFSC 32232C)	11

TABLE 15

EXAMPLES OF TASKS PERFORMED BY DAFSC 32272A PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=33)
C106 WRITE APRs	79
C100 PROVIDE TECHNICAL ASSISTANCE FOR JOB-RELATED PROBLEMS	73
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	73
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	70
A8 DETERMINE WORK PRIORITIES	70
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	70
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	70
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	67
E153 LOCATE PART OR STOCK NUMBERS	67
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	67
B66 SUPERVISE RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS SPECIALIST (32252A)	64
B62 SUPERVISE APPRENTICE RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS SPECIALIST (32232A)	64
A5 COORDINATE WORK WITH OTHER SECTIONS ON MAINTENANCE OF EQUIPMENT OR COMPONENTS	64
C93 INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	64
A14 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	64
B50 INITIATE PUNITIVE ACTIONS OR RECOGNITION FOR COMMENDABLE PERFORMANCES	64
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	61
E169 MAKE ENTRIES ON AF FORMs 797 (JOB QUALIFICATION STANDARD CONTINUATION SHEET)	61
D116 CONDUCT OJT	61
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	61
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	61
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	61
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	61
E178 MAKE ENTRIES ON AFTO FORMs 781 SERIES	58
A24 PLAN WORK ASSIGNMENTS	58

Average Number of Tasks Performed = 118

TABLE 16

EXAMPLES OF TASKS WHICH DIFFERENTIATE BETWEEN 322X2A
3-/5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 32232A/52A (N=176)	DAFSC 32272A (N=33)	DIFFERENCE
H386 REMOVE OR REPLACE IR CRYOGENIC REFRIGERATORS	62	24	+38
H392 REMOVE OR REPLACE IR MAGAZINES	67	30	+37
H402 REMOVE OR REPLACE IR SYSTEMS	65	30	+35
H383 REMOVE OR REPLACE IR CONTROL INDICATORS	61	27	+34
H393 REMOVE OR REPLACE IR POWER SUPPLIES	64	30	+34
H393 REMOVE OR REPLACE IR RECEIVERS	63	30	+33
H400 REMOVE OR REPLACE IR RECORDERS	63	30	+33
F259 SALVAGE WASTE FILM	69	36	+33
F235 PURGE COOLANT SYSTEMS	59	27	+32
I422 REMOVE OR REPLACE DDS TIME INSERTION UNITS	56	24	+32

C101 REVIEW MAINTENANCE DATA COLLECTION RECORDS	13	58	-45
A5 COORDINATE WORK WITH OTHER SECTIONS ON MAINTENANCE OF EQUIPMENT OR COMPONENTS	19	64	-45
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	21	67	-46
C93 INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	17	65	-48
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	22	70	-48
C106 WRITE APRs	29	79	-50
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	22	73	-51
A14 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	12	64	-52
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	18	70	-52
B50 INITIATE PUNITIVE ACTIONS OR RECOGNITION FOR COMMENDABLE PERFORMANCES	10	64	-54

Average number of tasks performed by 32232A/52A personnel - 114

Average number of tasks performed by 32272A personnel - 118

ANALYSIS OF 322X2A AFR 39-1 SPECIALTY DESCRIPTIONS

An analysis of the AFR 39-1 Specialty description is performed to determine if the career ladder document accurately describes the duties, responsibilities, qualifications, and explanations of shredouts in the field.

The specialty description for Avionic Sensor Systems Specialists (AFSCs 32212, 32, and 52A) and for Avionic Sensor Systems Technicians (AFSC 32272A), effective 31 October 1979, was compared to survey data relative to the A-shred.

The 39-1 specialty descriptions, overall, seem to be fulfilling the needs of the field quite well.

ANALYSIS OF 322X2A TAFMS GROUPS

Utilization patterns for survey respondents in different Total Active Federal Military Service (TAFMS) groups were reviewed to determine if there were differences in tasks performed. As is typical in most career ladders, as time in service increased, there was a corresponding increase in performance of duties involving managerial, supervisory, and training tasks.

As time spent in supervisory and administrative duties increased, performance time on tasks in the technical maintenance functions naturally declined. Even though there was a decrease in the technical aspects of the job in the career groups (97 months), 61 percent of their job time was still spent on general maintenance, systems maintenance, camera maintenance and administrative duties. Between the second enlistment (49-96 months and 97+ months), percent time spent on training and administrative tasks remained the same.

First-Enlistment Personnel

First-enlistment personnel spend most of their job time performing general avionic sensor and photographic systems maintenance tasks and maintaining side looking radar and infrared systems. They are also tasked with some supervisory, managerial, and training functions as displayed earlier in Table 14. Since first-enlistment personnel equal 72 percent of the total 322X2A sample it is understandable that they would need to perform some of those tasks which are normally left to more senior NCOs. Notice on the table that task "B61" is a question which supports the fact that cross-utilization between shreds exists. The question shows that 11 percent of A-Shred personnel in the 1-48 month group are supervising 32232C Shred personnel in electro-optical sensor systems.

Representative tasks performed by this first-enlistment group are listed in Table 17, which shows that overall, the "average" job of first-enlistment personnel involves very general technical tasks. This appearance of only general maintenance responsibility needs to be interpreted in light of the diverse job groups identified earlier. Highly technical tasks are performed by first-enlistment personnel, but for any given system, the percent of total first-enlistment personnel will be relatively small. This diversity or specialization among first-job personnel makes common training (other than general maintenance tasks) difficult and places a very heavy burden on OJT.

Figure 3 shows the distribution of 1-48 months TAFMS group members for all three career ladders across specialty jobs.

Job Satisfaction Data

As displayed in Table 18, the 1-48, 49-96, and 97+ TAFMS groups, overall, expressed job interest, perceived utilization of talent, and perceived utilization of training indicators for the current survey were all lower than

the comparative sample, with the exception of reenlistment intentions, which were equal to or slightly lower than the comparative data for all three TAFMS groups.

FIGURE 3

REPRESENTATION OF 1-48 MONTHS TAFMS GROUPS FOR CLUSTERS
AND INDEPENDENT JOB TYPES

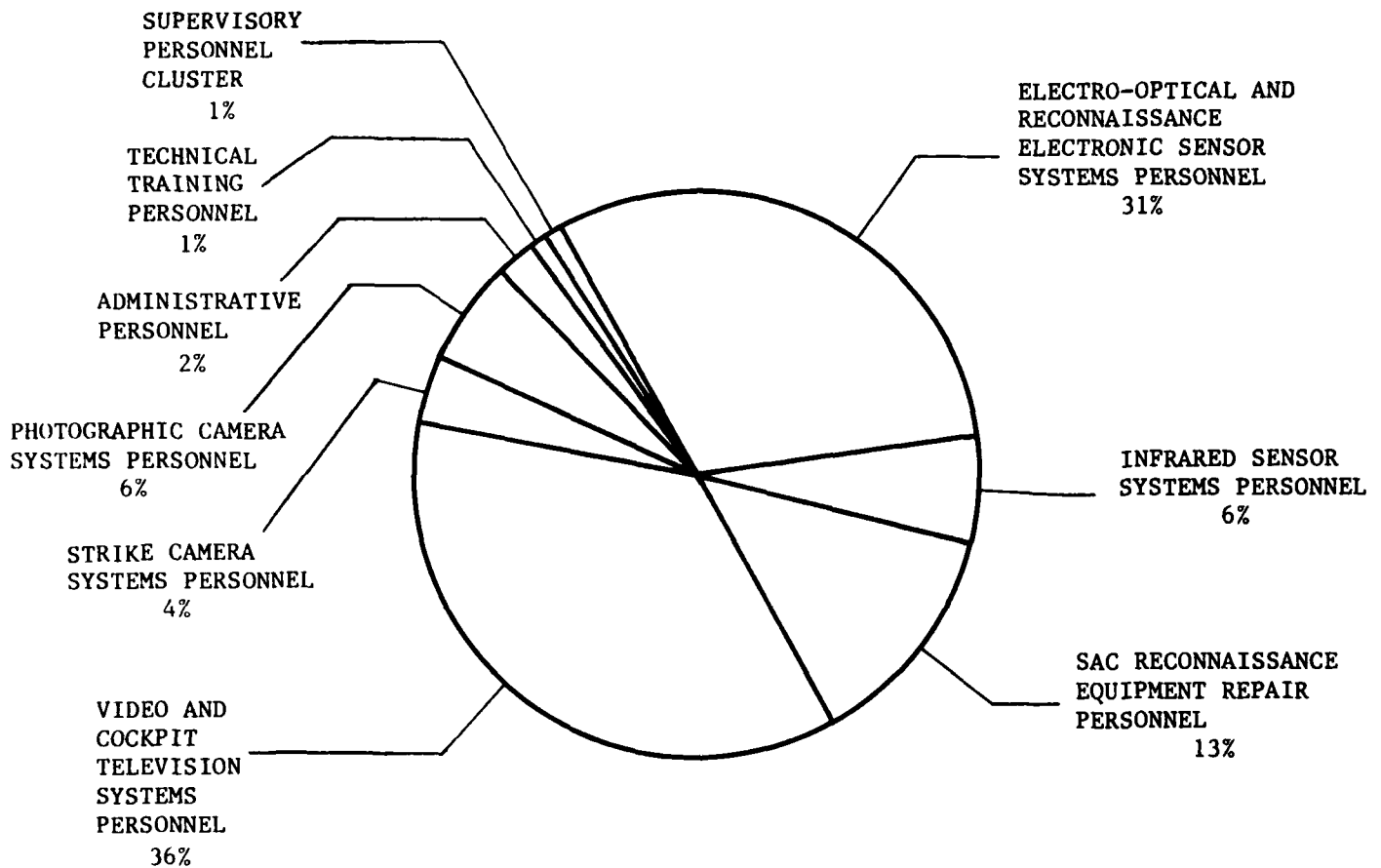


TABLE 17

REPRESENTATIVE TASKS PERFORMED BY 322X2A FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=151)
F258 SAFETY-WIRE EQUIPMENT	85
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRUs)	82
F237 READ OR INTERPRET WIRING DIAGRAMS	79
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	77
F232 PERFORM VOLTAGE CHECKS	76
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	75
E153 LOCATE PART OR STOCK NUMBERS	74
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	73
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	71
F259 SALVAGE WASTE FILM	69
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	69
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	69
F236 RAISE OR LOWER AIRCRAFT CANOPIES	67
F254 REMOVE OR REPLACE SYSTEM MOUNTS ON AIRCRAFT	66
F267 VISUALLY INSPECT COCKPIT PANELS	64
F235 PURGE COOLANT SYSTEMS	63
H392 REMOVE OR REPLACE IR MAGAZINES	63
H402 REMOVE OR REPLACE IR SYSTEMS	62
H393 REMOVE OR REPLACE IR POWER SUPPLIES	62
F270 VISUALLY INSPECT MISSION BAYS	60
H406 VISUALLY INSPECT IR SYSTEMS	60
H398 REMOVE OR REPLACE IR RECEIVERS	60
H400 REMOVE OR REPLACE IR RECORDERS	60
H383 REMOVE OR REPLACE IR CONTROL INDICATORS	60
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	59
F227 PACK OR UNPACK EQUIPMENT	58
F248 REMOVE OR REPLACE JUNCTION BOXES	58
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	57
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY	55
H375 OPERATIONALLY CHECK IR MAGAZINES	54
H377 OPERATIONALLY CHECK IR RECEIVERS	53

Average number of tasks performed - 114

TABLE 18

COMPARISON OF JOB SATISFACTION INDICATORS BY 322X2A TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	(N=151)	COMPARATIVE SAMPLE (N=3,206)	(N=24)	COMPARATIVE SAMPLE (N=1,447)	(N=31)	COMPARATIVE SAMPLE (N=2,200)
<u>EXPRESSED JOB INTEREST:</u>						
DULL	12	10	25	11	10	7
SO-SO	20	18	17	15	22	12
INTERESTING	68	72	58	72	68	79
<u>PERCEIVED UTILIZATION OF TALENT:</u>						
LITTLE OR NOT AT ALL	28	20	25	19	26	15
FAIRLY WELL TO PERFECTLY	72	80	75	81	74	85
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	32	20	33	22	29	19
FAIRLY WELL TO PERFECTLY	68	80	68	77	71	81
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	48	46	29	29	29	8
YES, OR PROBABLY YES	52	53	71	71	71	73

* May not total 100 percent due to nonresponse or rounding

** Comparative sample of mission equipment maintenance career ladders surveyed in 1983 (includes AFSCs
30XXX, 31XXX, 32XXX, 34XXX, 36XXX, 40XXX, 42XXX, 43XXX, 44XXX, and 46XXX)

TRAINING ANALYSIS

Technical school personnel from the Lowry Technical Training Center (Course 3ABR322X2A-001) were asked to match survey tasks to appropriate sections of the specialty training standard (STS) and the course plan of instruction (POI). The results of this matching process were then analyzed to help determine if the training documents were supporting the needs of the field. Those tasks not matched to the POI, as well as tasks not matched to the STS, were evaluated for training considerations. Those tasks rated high in percent members performing (at least 30 percent) and not matched, indicate a need for review of these documents. Tasks rated low in percent members performing (less than 10 percent) which were matched to the STS or POI indicate a need for review of the appropriate document areas.

Specialty Training Standard (STS)

An extensive review of STS 322X2A, dated March 1982, compared STS items to survey data. STS paragraphs containing general information or subject-matter knowledge proficiency requirements were not evaluated. Tasks matched to the STS seem to be supporting the paragraphs and subparagraphs of the document. Many tasks not referenced to the STS were found to have a high percent of members performing (as displayed in Table 19), which would seem to indicate a need for review of these items. Overall, the training document seems to be adequately supporting the needs of the field.

Plan of Instruction (POI)

Based on previously mentioned assistance from technical school subject-matter specialists in matching inventory tasks to the 3ABR322X2A-001 POI, dated 15 September 1982, a computer product was generated displaying the results of the matching process. Information furnished for consideration includes percent members performing in first-job and first-enlistment groups. A review of tasks matched to POI objectives, based on percent members performing, indicates that the tasks support current POI objectives. There were many tasks not referenced which had high enough percent members performing to justify a need for them to be reviewed for possible inclusion in the POI. Examples of tasks not referenced are displayed in Table 20 for first-job and first-enlistment personnel. The two major systems associated with the 322X2A shred are AN/AAD-5 infrared reconnaissance and the AN/ASQ-154 data display system. Both systems are taught at the Technical School, and the need for them is well supported by the data; there are about 70 percent members performing on each system. Based on this analysis, the POI, like the STS, seems support the needs of the career ladder.

Summary

The only area in both the STS and POI which may need to be reviewed is in the tasks not referenced. Those tasks which are referenced to the documents seem to be adequately supporting the STS paragraphs and subparagraphs and the POI objectives to which they are matched. Both documents seem to be supporting the needs of the 322X2A career ladder.

Prior to this study, an Electronics Principles Inventory (EPI) was recently completed which included the 322X2A AFSC. The goal of an EPI is to obtain information on percent members utilizing electronically related knowledge items. The knowledge-based inventory may be used in conjunction with this Occupational Survey Report as an aid in updating training documents in the field. Table 21 lists examples of electronics principles subject areas which have 5-skill level members performing at 50 percent or more.

TABLE 19

TASKS PERFORMED AND NOT REFERENCED TO 322X2A STS
(30 PERCENT OR MORE PERFORMING)

TASKS	1ST JOB (N=78)	1ST ENL (N=151)	5-SKILL LEVEL (N=116)	7-SKILL LEVEL (N=32)	TASK DIFF
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	76	76	74	42	3.73
F257 REMOVE OR REPLACE WIRING BUNDLES	32	33	37	27	5.78
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	64	70	72	46	5.97
E153 LOCATE PART OR STOCK NUMBERS	71	74	73	67	5.15
F248 REMOVE OR REPLACE JUNCTION BOXES	59	58	56	36	5.31
B43 DIRECT OR PARTICIPATE IN MOBILITY EXERCISES	27	35	40	42	5.21
F224 LUBRICATE MECHANICAL COMPONENTS	44	41	36	30	4.34
F214 DEBRIEF AIRCREWS	27	31	32	46	5.55
F259 SALVAGE WASTE FILM	72	69	69	36	3.54
F203 APPLY POTTING COMPOUNDS	26	31	34	24	4.51
F254 REMOVE OR REPLACE SYSTEMS MOUNTS ON AIRCRAFT	68	66	63	39	5.38
F235 PURGE COOLANT SYSTEMS	68	63	60	27	4.90
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY					
W842 INVENTORY CONSOLIDATED TOOL KITS (CTK)	54	55	57	36	4.09
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	37	34	39	30	3.22
M540 PERFORM DARKROOM PROCEDURES ON MC MAGAZINES	36	34	33	21	5.25
N583 PERFORM DARKROOM PROCEDURES ON PC CASSETTES	32	29	28	12	3.71
N584 PERFORM DARKROOM PROCEDURES ON PC MAGAZINES	35	29	27	9	3.01
T756 ADJUST AIRCRAFT CAMERA PARAMETER CONTROLS (ACPC)	37	33	32	15	3.01
L525 REMOVE OR REPLACE VIEWFINDER SYSTEMS FROM AIRCRAFT	35	34	33	15	4.65
L528 VISUALLY INSPECT VIEWFINDER SYSTEMS	35	34	36	21	5.96
M539 OPERATIONALLY CHECK MC SYSTEMS	40	37	38	21	5.43
M541 REMOVE OR REPLACE MC BODIES	32	30	28	12	3.71
M548 REMOVE OR REPLACE MC MAGAZINES	37	34	32	15	3.71
M552 VISUALLY INSPECT MC SYSTEMS	35	31	31	15	3.71
F225 OPERATE AIRCRAFT POWER UNITS	35	31	28	18	3.71
	41	41	42	24	4.72

TABLE 20

TASKS NOT REFERENCED TO 3ABR32232A-001 POI BLOCKS
(30 PERCENT OR MORE PERFORMING)

TASKS	FIRST JOB (N=78)	FIRST ENLISTMENT (N=151)	TASK DIFF
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	76	76	3.73
E153 LOCATE PART OR STOCK NUMBER	71	74	5.15
F248 REMOVE OR REPLACE JUNCTION BOXES	59	58	5.31
F244 REMOVE OR REPLACE CATHODE RAY TUBES	28	35	6.52
F257 REMOVE OR REPLACE WIRING BUNDLES	32	33	5.78
F266 TRACE AIRCRAFT WIRING SYSTEMS	36	44	6.15
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	64	70	5.97
F223 ISOLATE MALFUNCTIONS TO PRINTED CIRCUIT CARDS	41	44	6.13
H350 ALIGN IR RECEIVERS	28	30	6.09

* TD rating of 5.00 is average

TABLE 21

ELECTRONICS PRINCIPLES INVENTORY (EPI) PERCENTAGE OF 32252A
PERSONNEL USING PRINCIPLES

SUBJECT AREA	PERCENT USING (N=24)
DIRECT CURRENT	100
METERS/MULTIMETERS	100
SPECIAL PURPOSE ELECTRON TUBES	88
MATHEMATICS	83
ALTERNATING CURRENT	83
METER MOVEMENTS	83
RELAYS	79
POWER SUPPLIES	79
RESISTANCE AND RESISTIVE CIRCUITS	75
SOLDERING OR SOLDERLESS CONNECTIONS	75
MOTORS AND GENERATORS	71
INFRARED	71
OSCILLOSCOPES	67
SOLID-STATE SPECIAL PURPOSE DEVICES	67
TIMING CIRCUITS	67
CAPACITORS AND CAPACITIVE REACTANCE	63
SEMICONDUCTOR DIODES	63
TRANSISTORS	63
DIGITAL-TO-ANALOG AND ANALOG-TO-DIGITAL CONVERTERS	58
TRANSFORMERS	54
OSCILLOSCOPES	54
NUMBERING SYSTEMS	54
COUNTERS	54
MAGNETISM	50
RCL CIRCUITS	50
FILTERS	50
TRANSISTOR AMPLIFIERS	50
HETERODYNING AND MODULATION-DEMODULATION (MODEMS)	50
WAVESHAPING CIRCUITS	50

MAJCOM COMPARISONS

Tasks and background data for personnel of the five major commands (MAJCOM) with the largest 322X2A populations were compared to determine whether job content varied as a function of MAJCOM assignment.

Many of the basic general maintenance tasks and procedures were performed in common by relatively high percentages of personnel in all commands except ATC (see Table 22 for a display of selected common tasks). Generally, system-specific tasks performed, and time spent on those tasks, did not vary across MAJCOMs. Only three notable major differences were found, and they are discussed below.

Tactical Air Command (TAC)

TAC personnel spent a slightly higher percentage of their duty time maintaining panoramic camera (PC) systems, and had a higher percentage of members performing maintenance on framing camera (FC) systems and maintaining camera systems cockpit components than the other major commands.

The TAC functional manager for the A- and C-shreds stated that TAC routinely cross-utilizes members in the function of their jobs. This was further supported by field section chiefs and senior NCOs. TAC seems to be doing this more than any of the other major commands.

Strategic Air Command (SAC)

Personnel in SAC tend to spend a greater portion of their job time in the operation and maintenance of side-looking radar (SLR) systems, such as aligning SLR synchronizers, transmitters and receivers, and bench checking SRL antenna controls. They also spent a higher percentage of their job time than other MAJCOM personnel performing general avionic sensor and photographic systems maintenance.

Pacific Air Forces (PACAF)

PACAF personnel spent more of their job time performing tasks related to infrared (IR) systems than any other command. Such tasks include aligning IR receivers and recorders, and bench checking IR control panels, magazines and receivers.

Air Training Command (ATC)

ATC sample personnel are distinguished from the other MAJCOMs by the dominance of training activity (see Table 23) and the limited amount of involvement with avionics systems maintenance. This difference is expected, since the mission of ATC is to train.

TABLE 22

EXAMPLES OF COMMON TECHNICAL TASKS PERFORMED ACROSS 322X2A MAJCOM GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	TAC (N=93)	SAC (N=57)	USAFE (N=32)	PACAF (N=14)	ATC (N=9)
F109 ADJUST PRINTED CIRCUIT CARDS	28	61	25	79	11
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	53	60	44	64	11
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY	62	28	59	79	11
F227 PACK OR UNPACK EQUIPMENT	57	61	50	71	11
F232 PERFORM VOLTAGE CHECKS	72	83	56	71	11
F236 RAISE OR LOWER AIRCRAFT CANOPIES	82	40	69	86	11
F237 READ OR INTERPRET WIRING DIAGRAMS	79	72	72	93	22
F244 REMOVE OR REPLACE CATHODE RAY TUBES	31	35	31	50	11
F248 REMOVE OR REPLACE JUNCTION BOXES	55	70	34	64	11
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	74	79	50	86	11
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	30	84	28	79	11
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	73	58	63	93	11
F254 REMOVE OR REPLACE SYSTEM MOUNTS ON AIRCRAFT	66	65	53	64	11
F258 SAFETY-WIRE EQUIPMENT	85	88	63	93	11
F259 SALVAGE WASTE FILM	73	68	50	64	11
F266 TRACE AIRCRAFT WIRING SYSTEMS	52	39	34	79	11
F267 VISUALLY INSPECT COCKPIT PANELS	70	53	56	86	22
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	67	86	63	86	22
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRUs)	82	79	75	93	22
F270 VISUALLY INSPECT MISSION BAYS	52	81	47	71	22

TABLE 23

REPRESENTATIVE TASKS DISPLAYING DIFFERENCES BETWEEN 322X2A MAJCOM GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	TAC (N=93)	SAC (N=57)	PACAF (N=14)	ATC (N=9)
J455 REMOVE OR REPLACE FC BODIES	52	0	43	0
J464 REMOVE OR REPLACE FC MAGAZINES	51	0	43	0
J466 REMOVE OR REPLACE FC SYSTEMS FROM AIRCRAFT	51	0	43	0
J467 VISUALLY INSPECT FC SYSTEMS	51	0	43	0
G278 ALIGN SLR SYNCHRONIZERS	1	58	7	11
G255 BENCH CHECK SLR ANTENNA CONTROLS	1	58	14	0
G279 ALIGN SLR TRANSMITTERS	1	54	7	11
G274 ALIGN SLR RECEIVERS	1	53	7	0
H350 ALIGN IR RECEIVERS	35	0	86	22
H351 ALIGN RECORDERS	33	2	86	22
H352 BENCH CHECK IR CONTROL PANELS	27	0	86	11
H355 BENCH CHECK IR MAGAZINES	33	0	86	11
H358 BENCH CHECK IR RECEIVERS	32	0	86	11
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	12	33	29	67
C75 EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	9	9	21	56
D118 CONDUCT REVIEW TRAINING	3	4	14	56
D131 EVALUATE PROGRESS OR RESIDENT COURSE STUDENTS	3	5	7	56
D138 PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	3	5	14	56

Conclusions

TAC seems to be cross-utilizing members more than any of the other commands. This may be a function of the similarity of systems maintained by both the A- and C- shreds. Side looking radar systems are utilized more by SAC than any other command, with a small percentage being utilized by PACAF. Specific differences exist across the four major users of A-shred personnel. Table 23 lists examples of these differences. The boxed areas indicate those tasks which have the greatest percent members performing in each of the four MAJCOMs. This table should help highlight some of the differences that exist. There remains a central core of administrative supervisory managerial, and training, as well as technical-general maintenance tasks that are required of essentially all 322X2A personnel. The PACAF group, although it is an overseas command, performed tasks in about the same percent members performing as those in CONUS commands. Comparisons of CONUS/Overseas groups will be discussed in the next section.

ANALYSIS OF 322X2A CONUS VERSUS OVERSEAS GROUPS

CONUS/Overseas survey data were compared to determine differences which might exist between the two. After analyzing the information in terms of percent members performing tasks, the similarity of tasks performed, and the time spent on those tasks, it was clear that there were few differences in these areas. The differences found in other areas were also either small, or nonexistent. For instance, average paygrade for both groups was E-4, average TAFMS for CONUS was 40 months, and 47 for overseas. Job satisfaction indicators showed little difference in all areas.

COMPARISON OF CURRENT 322X2A SURVEY TO PREVIOUS SURVEY

The results of this survey for 322X2A personnel were compared to those of Occupational Survey Report (OSR) AFPT 90-322-378, dated September 1980, which included all three shreds of the 322X2 career field. Comparisons were made to career ladder structure, and both DAFSC and TAFMS groups.

Figure 4 displays the comparison of the jobs identified for 322X2A personnel in 1984 and those from the 1980 study. In the current survey, infrared sensor systems personnel are discussed as an independent job type and side-looking radar personnel are discussed within the SAC reconnaissance equipment repair cluster. As shown in the current career ladder structure analysis, and in the 1980 survey report, some A-shred personnel were performing essentially the same tasks as C-shred personnel when they were assigned to TAC units. The shreds, however, differ significantly in equipment maintained and systems knowledge required. Administrative personnel could not be linked to any group in the 1980 survey. They were probably included in the more senior jobs at that time.

A significant difference between the current and previous survey was found in the first-enlistment (1-48 TAFMS) group. In the 1980 survey, they comprised 51 percent of the total 322X2A sample. In this survey, they represent 72 percent of the total sample (total survey size in 1980 = 142 with 73 members in the 1-48 months TAFMS group; total survey size in 1983 = 209 with 151 members in the 1-48 months TAFMS group). This trend reflects a lower experience level within the AFSC. This may be a result of low reenlistment of senior NCOs in recent years, which was identified as a potential problem area in the previous survey. Other data which verify this trend can be found in Table 24 in the "total sample" column which shows a large difference in average months in career field and average months in service. Also note that supervisors are responsible for a larger percentage of personnel in the current survey. This would all seem to indicate a reduction in experienced NCOs, and a large increase in the number of first-enlistment members in the field.

Job Satisfaction Indicators

A review of the comparisons of job satisfaction indicators by 322X2A TAFMS groups displayed in Table 25 indicates that job satisfaction attitudes for the 1-48 and 49-96 TAFMS groups are higher than in the previous survey. This is not true of the 97+ TAFMS group which has lower satisfaction indicators in all areas with the one exception being reenlistment intentions. Note the reenlistment intentions for the three TAFMS groups in the 1980 survey. They are extremely low and may be one of the primary causes for the decrease in experience levels in the career field. This may also be one reason for the low job satisfaction indicators which occur as TAFMS increases since there seems to be a corresponding increase in the number of people supervised, which indicates increased responsibility and increased job pressure. While reenlistment intentions seem high for all TAFMS groups in the current survey, this area may need to be observed closely in the future since utilization and job interest indicators for senior

NCOs are low. Similar findings were reflected by DAFSC groups, as displayed earlier in Table 24. This problem, and others, will be discussed further in the implications section of this OSR. These problems were not found in the C-shred of the AFS, which will be discussed in the following section.

FIGURE 4

COMPARISON OF PRESENT OSR TO 1980 SURVEY
FOR 322X2A AND 322X2C CAREER LADDERS

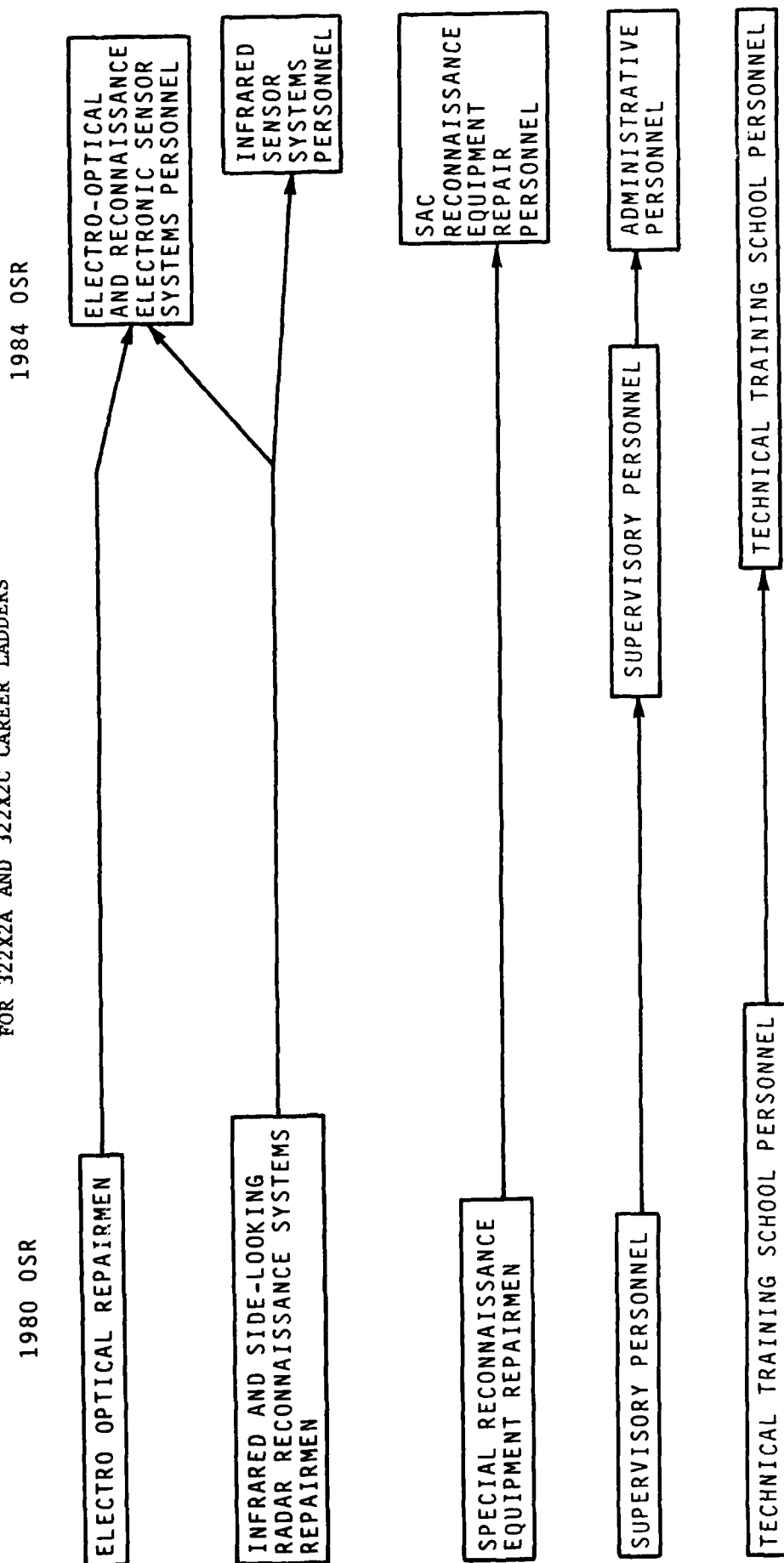


TABLE 24

COMPARISON OF PREVIOUS SURVEY AND CURRENT SURVEY 322X2A DAFSC GROUPS

	TOTAL SAMPLE		DAFSC 32232A		DAFSC 32252A		DAFSC 32272A	
	1980 (N=145)	1984 (N=209)	1980 (N=12)	1984 (N=60)	1980 (N=94)	1984 (N=116)	1980 (N=39)	1984 (N=33)
<u>GENERAL BACKGROUND INFORMATION:</u>								
AVERAGE MONTHS IN CAREER FIELD	62	(47)	16	17	35	34	139	142
AVERAGE MONTHS IN SERVICE	79	(52)	21	21	47	37	172	162
PERCENT SUPERVISING	21%	31%	0	10%	7%	27%	61%	85%
AVERAGE GRADE	E-4	E-4	E-3	E-3	E-4	E-4	E-6	E-6
<u>JOB ATTITUDE INFORMATION:</u> (PERCENT MEMBERS RESPONDING)								
JOB FAIRLY INTERESTING OR BETTER	56	67	67	68	46	65	77	70
TALENT UTILIZED FAIRLY WELL OR BETTER	64	73	50	78	59	69	79	76
TRAINING UTILIZED FAIRLY WELL OR BETTER	58	68	42	72	54	66	72	70
FAVORABLY CONSIDERING REENLISTMENT	39	57	33	52	(30)	57	62	67

TABLE 25

COMPARISON OF PREVIOUS SURVEY AND CURRENT SURVEY 322X2A TAFMS GROUPS

Job Satisfaction Indicators

	<u>1-48 MONTHS</u>		<u>49-96 MONTHS</u>		<u>97+ MONTHS</u>	
	<u>1980</u> <u>(N=73)</u>	<u>1984</u> <u>(N=151)</u>	<u>1980</u> <u>(N=35)</u>	<u>1984</u> <u>(N=24)</u>	<u>1980</u> <u>(N=37)</u>	<u>1984</u> <u>(N=31)</u>
<u>EXPRESSED JOB INTEREST:</u>						
DULL	25	12	20	25	11	10
SO-SO	22	20	40	17	8	23
INTERESTING	52	68	37	58	81	68
<u>PERCEIVED UTILIZATION OF TALENT:</u>						
LITTLE OR NOT AT ALL	40	28	49	25	19	26
FAIRLY WELL TO PERFECTLY	60	72	51	75	81	74
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	45	32	54	33	19	29
FAIRLY WELL TO PERFECTLY	54	68	46	68	78	71
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	75	48	60	29	31	29
YES, OR PROBABLY YES	24	52	40	71	66	71

SECTION IV

ANALYSIS OF 332X2C DAFSC GROUPS

As explained in Section III, data pertaining to DAFSC groups is important to the analysis of each career ladder. As personnel progress upward through the skill levels, the breadth of jobs increases as supervisory, managerial, training, and administrative tasks are performed in addition to the technical tasks pertaining to general and specific instrument systems maintenance. Specific skill level groups are discussed below. Since a comparison of task performed by DAFSCs 32232C and 32252C personnel indicated no significant difference in the jobs they perform, they will be discussed as one group.

Skill Level Descriptions

DAFSCs 32232C/32252C. Three- and five-skill level personnel, representing 62 percent (130 members) of the 322X2C survey sample, performed an average of 109 tasks. Members perform technical duties involving general maintenance, as well as repair tasks on such specific systems as panoramic camera (PC) systems and framing camera (FC) systems. While administrative and supervisory tasks are performed by some members of this group, the percent performing is extremely low. Typical general maintenance tasks performed included:

- salvaging waste film
- visually inspecting cockpit panels
- cleaning sensor or camera viewing windows on aircraft
- safety-wiring equipment
- reading or interpreting wiring diagrams

Examples of tasks relating to specific systems maintained were:

- removing or replacing PC magazines
- removing or replacing FC bodies and cassettes
- operationally checking intervalometer panels
- operationally checking film/cart remaining panels
- visually inspecting viewfinder systems

Table 26 presents additional representative tasks performed by this group.

DAFSC 32272C. The 63 personnel at the 7-skill level performed an average of 170 tasks. While 7-skill level personnel perform some technical tasks, supervisory, managerial, and administrative tasks became the dominant feature of their job. Table 27 presents representative tasks which have high (above 60) percent members performing. Although many of the tasks listed are technical in nature, senior NCOs actually spend very little job time doing them.

Differences between the 3-, 5- and 7-skill level groups are reflected by the listing of tasks in Table 27. It is apparent here that, while 7-skill airmen still perform technical tasks, the group members clearly have the greatest responsibility for supervision, management, and training in the career ladder.

Summary

Career ladder progression is well defined, with personnel at the 3- and 5-skill level spending the vast majority of their job time performing technical tasks, while at the 7-skill level, supervisory and administrative functions become the dominant characteristics of the job.

TABLE 26

EXAMPLES OF TASKS PERFORMED BY DAFSC 32232C/32252C PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=130)
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	81
F258 SAFETY-WIRE EQUIPMENT	80
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	78
F209 CLEAN SENSOR OR CAMERA VIEWING WINDOWS ON AIRCRAFT	77
F237 READ OR INTERPRET WIRING DIAGRAMS	77
F232 PERFORM VOLTAGE CHECKS	72
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	71
F259 SALVAGE WASTE FILM	71
E153 LOCATE PART OR STOCK NUMBERS	69
F247 REMOVE OR REPLACE FILTERS ON LENS	67
L528 VISUALLY INSPECT VIEWFINDER SYSTEMS	65
F267 VISUALLY INSPECT COCKPIT PANELS	64
V809 OPERATIONALLY CHECK INTEVALOMETER PANELS	63
L525 REMOVE OR REPLACE VIEWFINDER SYSTEMS FROM AIRCRAFT	63
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	62
N604 VISUALLY INSPECT PC SYSTEMS	62
V834 REMOVE OR REPLACE SENSOR CONTROL PANELS #1 OR #2	62
V820 REMOVE OR REPLACE FILM/CART REMAINING PANELS	62
T777 REMOVE OR REPLACE ACPCs	61
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	61
N587 REMOVE OR REPLACE PC BODIES	61
F227 PACK OR UNPACK EQUIPMENT	60
N600 REMOVE OR REPLACE PC MAGAZINES	60
M548 REMOVE OR REPLACE MC MAGAZINES	60
F270 VISUALLY INSPECT MISSION BAYS	57

Average number of tasks performed - 109

TABLE 27

EXAMPLES OF TASKS PERFORMED BY DAFSC 32272C PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=63)
C106 WRITE APRs	82
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	73
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	73
B64 SUPERVISE ELECTRO-OPTICAL SENSOR SYSTEM SPECIALISTS (AFSC 32252C)	71
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	71
E153 LOCATE PART OR STOCK NUMBERS	71
A8 DETERMINE WORK PRIORITIES	70
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	70
D122 DEMONSTRATE OPERATION OF EQUIPMENT	70
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	67
F237 READ OR INTERPRET WIRING DIAGRAMS	67
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	67
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	65
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	65
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	65
D116 CONDUCT OJT	65
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	65
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	65
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	64
B61 SUPERVISE APPRENTICE ELECTRO-OPTICAL SENSOR SYSTEMS SPECIALIST (AFSC 32232C)	62
C100 PROVIDE TECHNICAL ASSISTANCE FOR JOB-RELATED PROBLEMS ENCOUNTERED BY SUBORDINATES	62
F267 VISUALLY INSPECT COCKPIT PANELS	62
A18 ESTABLISH WORK PRIORITIES	60
F270 VISUALLY INSPECT MISSION BAYS	60
F266 TRACE AIRCRAFT WIRING SYSTEMS	60

Average number of tasks performed - 170

TABLE 28

EXAMPLES OF TASKS WHICH DIFFERENTIATE BETWEEN
3-/5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 32232C/52C (N=130)	DAFSC 32272C (N=63)	DIFFERENCE
F248 REMOVE OR REPLACE JUNCTION BOXES	60	37	+33
N590 REMOVE OR REPLACE PC CASSETTES	58	35	+33
L523 REMOVE OR REPLACE VIEWFINDER LOWER HOUSINGS	60	29	+31
W865 WASH AIRCRAFT	34	5	+29
L520 REMOVE OR REPLACE VIEWFINDER INTERMEDIATE HOUSINGS	58	32	+26
F247 REMOVE OR REPLACE FILTERS ON LENS	65	40	+25
V830 REMOVE OR REPLACE PHOTO CONTROL SYSTEM JUNCTION BOXES	61	37	+24
F209 CLEAN SENSOR OR CAMERA VIEWING WINDOWS ON AIRCRAFT	78	54	+24
L525 REMOVE OR REPLACE VIEWFINDER SYSTEMS FROM AIRCRAFT	65	41	+24
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	81	57	+24

B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	10	56	-46
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	18	65	-47
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	17	64	-47
B64 SUPERVISE ELECTRO-OPTICAL SENSOR SYSTEM SPECIALISTS (AFSC 32252C)	24	71	-47
A3 ATTEND STAFF MEETINGS, COUNCIL MEETINGS, OR BOARD MEETINGS	8	56	-48
STANDARD CONTINUATION)	16	64	-48
A21 PLAN OR SCHEDULE WORK ASSIGNMENTS	10	59	-49
A33 SCHEDULE WORK ASSIGNMENTS	3	52	-49
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	17	67	-50
A24 PLAN WORK ASSIGNMENTS	8	59	-51

Average number of tasks performed by 32232C/52C personnel - 109

Average number of tasks performed by 32272C personnel - 170

ANALYSIS OF 322X2C AFR 39-1 SPECIALTY DESCRIPTIONS

Comparison of duties and tasks performed by personnel at the various DAFSC levels of the 322X2 C-shred indicates the 31 October 1979 AFR 39-1 Specialty Descriptions satisfactorily describes the major functions by personnel in this career ladder at the various skill levels, while the shredout portion properly identifies equipment maintained as including electro-optical sensors, such as optical cameras, mounts, viewfinders, aircraft parameter controls, and control systems. The specialty description seems to be supporting the needs of the field quite well.

ANALYSIS OF 322X2C TAFMS GROUPS

Utilization patterns for 322X2C respondents in different experience (TAFMS) groups were reviewed to determine if there were differences in tasks performed. As is true for most career ladders, as time in service increased, there was a corresponding increase in performance of duties involving managerial, supervisory, and training tasks. As time spent in supervisory and administrative duties increased, there was a corresponding decrease in the proportion of time spent on tasks in the technical maintenance functions. The job remained partially technical for the 97+ career group in this AFSC, with a small percentage of their job time spent on general maintenance, systems maintenance, camera maintenance, and administrative duties.

First-Enlistment Personnel

First-enlistment personnel (1-48 months) spent most of their job time performing general avionic sensor and photographic systems maintenance and maintaining framing camera (FC) systems, panoramic camera (PC) systems and camera systems cockpit components. A small portion of the first-termers' job involved supervisory, managerial, or training tasks, however, the majority of their job is highly technical in nature. (Representative tasks performed by this group are listed in Table 29.) Average number of tasks performed is 132 and average paygrade is E-3.

Figure 3, as displayed in SECTION III, shows the distribution of 1-48 months TAFMS group members for all three career ladders across specialty jobs.

Job Satisfaction

Table 30 presents data reflecting the job interest, perceived utilization of talents and training, and reenlistment intentions of selected TAFMS groups. Comparisons were also made between 322X2C TAFMS groups and comparative samples of all other mission equipment maintenance career ladders surveyed in 1983.

Comparison of the groups indicates that 322X2C first-term airmen, while finding their job interesting, showed differences in perceived utilization of talents and training. The second-enlistment group (49-96) showed large differences from the comparative data in all areas, the most notable difference being in the perceived utilization of training and reenlistment intentions as displayed in Table 30. Career members (97+) also had differences in all areas, with the most notable being in perceived utilization of training. The lower percentages expressing satisfaction with use of their training is a consistent trend across all TAFMS groups, though lower reenlistment intentions are found only in the 1-48 months TAFMS group.

Overall, reenlistment intentions are better than the comparative sample. Job utilization and job interest indicators are generally good, though not always higher than the comparative sample. Attitude toward training suggests a possible problem area.

TABLE 29

REPRESENTATIVE TASKS PERFORMED BY 322X2C FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=103)
F258 SAFETY-WIRE EQUIPMENT	86
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	68
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	84
F209 CLEAN SENSOR OR CAMERA VIEWING WINDOWS ON AIRCRAFT	81
F237 READ OR INTERPRET WIRING DIAGRAMS	81
F259 SALVAGE WASTE FILM	78
F232 PERFORM VOLTAGE CHECKS	78
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	76
F247 REMOVE OR REPLACE FILTERS ON LENS	71
L528 VISUALLY INSPECT VIEWFINDER SYSTEMS	71
E153 LOCATE PART OR STOCK NUMBERS	70
V809 OPERATIONALLY CHECK INTEVALMOMETER PANELS	69
F267 VISUALLY INSPECT COCKPIT PANELS	68
N604 VISUALLY INSPECT PC SYSTEMS	68
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	68
V820 REMOVE OR REPLACE FILM/CART REMAINING PANELS	68
L527 REMOVE OR REPLACE VIEWFINDER UPPER HOUSINGS	67
T777 REMOVE OR REPLACE ACPCs	66
M548 REMOVE OR REPLACE MC MAGAZINES	66
N587 REMOVE OR REPLACE PC BODIES	66
F227 PACK OR UNPACK EQUIPMENT	65
M539 OPERATIONALLY CHECK MC SYSTEMS	65
V814 OPERATIONALLY CHECK SENSOR CONTROL PANELS #1 OR #2	65
F269 VISUALLY INSPECT LINE REPLACEMENT UNITS (LRUs)	64
M552 VISUALLY INSPECT MC SYSTEMS	64
T773 OPERATIONALLY CHECK ACPCs	64
V807 OPERATIONALLY CHECK FILM/CART REMAINING PANELS	64
N590 REMOVE OR REPLACE PC CASSETTES	62
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	60
N600 REMOVE OR REPLACE PC MAGAZINES	54

Average number of tasks performed = 133

TABLE 30

COMPARISON OF JOB SATISFACTION INDICATORS BY 322X2C TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	CURRENT SURVEY (N=103)	COMPARATIVE SAMPLE (N=3,206)	CURRENT SURVEY (N=25)	COMPARATIVE SAMPLE (N=1,447)	CURRENT SURVEY (N=65)	COMPARATIVE SAMPLE (N=2,200)
<u>EXPRESSED JOB INTEREST:</u>						
DULL	18	10	20	11	8	7
SO-SO	16	18	20	15	15	12
INTERESTING	66	70	60	72	77	79
<u>PERCEIVED UTILIZATION OF TALENT:</u>						
LITTLE OR NOT AT ALL	25	20	28	19	21	15
FAIRLY WELL TO PERFECTLY	74	80	72	81	79	85
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	38	20	52	22	31	19
FAIRLY WELL TO PERFECTLY	61	80	48	77	69	81
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	48	46	20	29	19	8
YES, OR PROBABLY YES	52	53	80	71	80	73

* May not total 100 percent due to nonresponses

** Comparative sample of mission equipment maintenance career ladders surveyed in 1983 (includes AFSCs 30XXX, 31XXX, 32XXX, 34XXX, 36XXX, 40XXX, 42XXX, 43XXX, 44XXX, and 46XXX)

TRAINING ANALYSIS

Potential use of survey data in development of training programs was explained in the discussion of the 322X2A career ladder in Section III and need not be repeated here. For the 322X2C career ladder, technical school personnel from the Lowry Technical Training Center, Lowry AFB, Colorado, matched inventory tasks to appropriate sections of the STS and POI for Course 3ABR322X2C-000. It was this matching upon which the comparisons of data to training documents were based. No training emphasis ratings are included since, as noted in the Introduction, agreement among 32272C raters was lacking. A complete computer listing reflecting the percent members performing and task difficulty ratings for each task statement, along with the STS and POI matching has been forwarded to the technical school for their use in any further detailed review of training documents. A summary of that information is described below.

Specialty Training Standard (STS)

A comprehensive review of STS 322X2C, dated December 1981, was made comparing STS items to survey data. STS paragraphs containing general information or subject-matter knowledge proficiency requirements were not evaluated. Generally, the STS provides comprehensive coverage of jobs performed by personnel in the field, with survey data supporting significant paragraphs or subparagraphs. In some instances, tasks not referenced have high percentages of personnel performing, which might indicate a need for them to be referenced in the STS.

Those tasks which were not referenced to the STS were evaluated and several were found to have high percent members performing. Examples of these can be found in Table 31. Computer printouts reflecting the match between STS items and survey sample data have been furnished to the technical school for further review.

Plan of Instruction (POI)

Based on the previously mentioned assistance from technical school subject-matter specialists in matching inventory tasks to the 3ABR32232C-000 POI, dated 22 March 1983, a computer product was generated displaying the results of that matching process. Information furnished for consideration includes task difficulty (TD) ratings, and percent members performing data for first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel.

A few apparently significant tasks with 30 percent or more first-job or first-enlistment personnel performing were not matched to POI blocks (Table 32). This indicates that formal training may be required and that resident technical training may be supported.

Systems maintained by 30 percent or more of first-enlistment personnel are listed in Table 33. In this table, all systems listed have high enough percent members performing figures to support a need for them to continue being taught in the course POI. This seems to show that the POI is supporting the needs of the AFSC.

As stated in the previous section, an additional source of information for 322X2C training developers is the recently completed electronics principles inventory (EPI). The EPI is a knowledge-based job inventory which identifies the range of electronic principles personnel needed to perform an electronics-oriented job. Table 34 displays the percent of 322X2C personnel reporting use of electronics principles as part of their jobs. Only 10 subject areas (56 total) were used by 50 percent or more of the 14 5-skill level personnel. These subject areas included resistance and resistive circuits, soldering and solderless connections, and infrared.

Summary

A large number of tasks not referenced to the documents were found to have high percent members performing, as displayed in Tables 31 and 32. Findings indicate a need for review of these areas for possible updating of both documents. Generally, both the STS and POI seem to be supporting the career ladder quite well.

Findings to this point indicate few changes from the previous survey, which will be discussed in the following section.

TABLE 31

TASKS PERFORMED AND NOT REFERENCED TO 322X2C STS
(30 PERCENT OR MORE PERFORMING)

TASKS	1ST JOB (N=30)	1ST ENL (N=103)	32252C (N=109)	32272C (N=63)	TASK DIFF
F267 VISUALLY INSPECT COCKPIT PANELS	50	68	66	62	3.94
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	53	59	58	57	4.22
F270 VISUALLY INSPECT MISSION BAYS	53	58	59	60	4.16
F236 RAISE OR LOWER AIRCRAFT CANOPIES	37	59	59	54	2.88
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	40	52	56	67	3.51
F247 REMOVE OR REPLACE FILTERS ON LENS	63	71	65	40	2.71
F227 PACK OR UNPACK EQUIPMENT	70	65	61	49	3.06
H402 REMOVE OR REPLACE IR SYSTEMS	37	52	50	35	5.38
H392 REMOVE OR REPLACE IR MAGAZINES	37	52	51	35	3.34
H393 REMOVE OR REPLACE IR POWER SUPPLIES	33	45	45	27	3.81
H400 REMOVE OR REPLACE IR RECORDERS	37	50	49	33	5.19
H405 REMOVE OR REPLACE IRPAS	33	48	46	32	3.86
H386 REMOVE OR REPLACE IR CRYOGENIC REFRIGERATORS	37	46	45	25	4.72
H398 REMOVE OR REPLACE IR RECEIVERS	37	51	50	33	4.85
I418 REMOVE OR REPLACE DDS CONVERTERS	30	35	34	27	4.32

TABLE 32

EXAMPLES OF TASKS NOT REFERENCED TO POI WHICH HAVE GREATER
THAN 30 PERCENT MEMBERS PERFORMING

TASKS	PERCENT PERFORMING		TASK DIFF
	1ST JOB (N=30)	1ST ENL (N=103)	
N578 ISOLATE MALFUNCTIONS TO PC SYSTEMS	30	51	4.80
L525 REMOVE OR REPLACE VIEWFINDER SYSTEMS FROM AIRCRAFT	47	69	5.74
F208 CLEAN MIRRORS OR LENS WITH STATIC HAIR BRUSHES OR COMPRESSED AIR	47	40	2.87
F248 REMOVE OR REPLACE JUNCTION BOXES	40	62	4.81
V830 REMOVE OR REPLACE PHOTO CONTROL SYSTEM JUNCTION BOXES	40	63	5.47
L527 REMOVE OR REPLACE VIEWFINDER UPPER HOUSINGS	47	67	5.38
L516 REMOVE OR REPLACE VIEWFINDER DEHYDRATOR DESSICANTS	43	65	3.84
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	80	86	3.06
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES SUCH AS COVERS	70	85	1.85
T777 REMOVE OR REPLACE ACPCS	47	66	3.87
V834 REMOVE OR REPLACE SENSOR CONTROL PANELS #1 OR #2	43	67	3.45

TABLE 33

SYSTEMS MAINTAINED BY 30 PERCENT OR MORE OF 322X2C FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

<u>SYSTEMS MAINTAINED</u>	<u>PERCENT MEMBERS MAINTAINING (N=103)</u>
<u>ELECTRO-OPTICAL CAMERA SYSTEMS</u>	
KA-56 PANORAMIC CAMERA SYSTEM	80
KA-91 PANORAMIC CAMERA SYSTEM	80
T-11 MAPPING CAMERA SYSTEM	79
KS-87 FRAMING CAMERA SYSTEM	78
VF-57 VIEWFINDER SYSTEM	76
KD-29 RADAR RECORDING CAMERA SYSTEM	45
KS-74 RADAR RECORDING CAMERA SYSTEM	32

TABLE 34

ELECTRONICS PRINCIPLES INVENTORY (EPI) PERCENTAGE OF
32252C PERSONNEL USING PRINCIPLES

<u>SUBJECT AREA</u>	<u>PERCENT USING (N=14)</u>
DIRECT CURRENT	93
METERS/MULTIMETERS	93
METER MOVEMENTS	79
RESISTANCE AND RESISTIVE CIRCUITS	64
PHOTOSENSITIVE DEVICES	64
SOLDERING AND SOLDERLESS CONNECTIONS	57
SOLID-STATE SPECIAL PURPOSE DEVICES	57
MATHEMATICS	50
ALTERNATING CURRENT (AC)	50
INFRARED	50

MAJCOM COMPARISONS

Tasks and background data for personnel of the five major commands (MAJCOMs) with the largest 322X2C populations were compared to determine whether job content varied as a function of MAJCOM assignment.

As was true of the 322X2A career ladder discussed in Section III, many of the basic general maintenance tasks and procedures were performed in common by personnel in all commands, however, ATC has a lower percentage of members performing (see Table 34). System specific tasks performed and time spent on those tasks did not appear to vary between TAC and USAFE, however, PACAF personnel have a far greater percentage performing tasks relating to viewfinders, framing camera (FC), mapping camera (MC), panoramic camera (PC), and miscellaneous camera systems (see Table 35). SAC and ATC personnel, on the other hand, have a very limited mission within the 322X2C career ladder, as displayed by the highlighted areas in Table 35. The majority of SAC personnel's time is spent performing general avionic sensor and photographic systems maintenance. ATC airmen are distinguished from other MAJCOMs by the higher percentage of personnel performing tasks related to training. No other major differences were noted.

Summary

Essentially, all 322X2C personnel perform a central core of administrative, supervisory, managerial, and training tasks. Major differences were noted between SAC, ATC, and PACAF when compared with TAC and USAFE, who have much in common. PACAF is an overseas command, which may have a bearing on these differences. CONUS versus overseas will be discussed in the next section.

TABLE 35

REPRESENTATIVE TASKS DISPLAYING DIFFERENCES BETWEEN 322Y2C MAJCOM GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	TAC (N=95)	SAC (N=42)	USAFE (N=23)	PACAF (N=22)	ATC (N=7)
J424 ADJUST FC BODIES	19	0	22	73	0
J425 ADJUST FC CASSETTES	31	0	26	73	0
J427 ADJUST FC FIXED 3" DAY-NIGHT LENS CONES	23	0	26	73	0
J430 ADJUST FC MAGAZINES	25	0	22	73	0
J431 ADJUST FC VARIABLE 6" DAY-NIGHT LENS CONES	24	0	26	73	0
J451 OPERATIONALLY CHECK FC FSYSYSTEMS ON AIRCRAFT	48	7	52	86	0
J467 VISUALLY INSPECT FC SYSTEMS	60	7	61	86	29
J450 OPERATIONALLY CHECK FC SYSTEMS IN SHOP	13	7	22	82	0
J449 OPERATIONALLY CHECK FC SHUTTERS	39	5	35	73	0
J456 REMOVE OR REPLACE FC BODY COMPONENTS	19	0	26	73	0
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	79	0	61	91	0
L509 ELECTRICALLY ADJUST VIEWFINDERS	27	0	30	77	0
L514 ISOLATE MALFUNCTIONS ON VIEWFINDER UPPER HOUSINGS	35	0	35	77	0
L520 REMOVE OR REPLACE VIEWFINDER INTERMEDIATE HOUSINGS	70	0	44	73	0
L523 REMOVE OR REPLACE VIEWFINDER LOWER HOUSINGS	70	0	48	68	0
M539 OPERATIONALLY CHECK MC SYSTEMS	70	14	65	82	0
M529 ADJUST MC MAGAZINES	31	12	26	77	0
M532 ISOLATE MALFUNCTIONS ON MC MAGAZINES	35	12	30	77	0
N580 OPERATE PC TEST SETS	24	14	30	77	0
N555 ADJUST PC CASSETTES	33	3	30	68	0
N588 REMOVE OR REPLACE PC BODY COMPONENTS	28	3	30	68	0
D142 SCORE TESTS	1	0	4	5	0
D137 PREPARE LESSON PLANS	3	0	9	0	71
D134 MAINTAIN STUDY REFERENCE FILES	2	0	4	9	71
D114 ATTEND TRAINING CONFERENCES OR MEETINGS	2	2	17	18	57
D125 DETERMINE RESIDENT COURSE TRAINING REQUIREMENTS	3	0	9	9	43

ANALYSIS OF 322X2C CONUS VERSUS OVERSEAS GROUPS

In this shred, five times as many duty 32252C airmen were assigned in the CONUS as were assigned overseas. Both CONUS and overseas personnel averaged the same amount of time in service and in the career field, with overseas personnel performing an average of 84 more tasks. Typically, jobs performed by substantially equal percentages of both groups included a number of general maintenance tasks, such as:

- cleaning sensor or camera viewing windows on aircraft
- coordinating with crew chiefs or other personnel on
accessibility of aircraft
- performing voltage checks
- reading or interpreting wiring diagrams
- removing or replacing filters on lens
- removing or replacing light bulbs, fuses, or circuit
breakers
- removing or replacing sensor protective devices, such
as covers
- safety-wiring equipment
- salvaging waste film

CONUS personnel show a slightly higher amount of time maintaining infrared (IR) systems, while overseas personnel spent a slightly higher percentage of their duty time maintaining framing camera (FC) systems, and camera systems cockpit components.

While the jobs performed by the two groups are generally comparable, some differences in job orientation were noted in the data. Table 36 lists representative tasks which differentiate between CONUS and overseas personnel.

Also, CONUS members performed electro-optical camera systems maintenance on driftsights, the HR-308B and HR-308C framing cameras, the IRIS-III, optical bar camera, and the T-35, while overseas personnel did not. CONUS personnel also had higher percentages maintaining AN/AA-18 infrared reconnaissance and AN/ASQ-90 data display reconnaissance electronic sensor systems than their overseas counterparts. On the other hand, percentages of the overseas group maintaining the KA-56 panaramic camera systems, KA-9 camera system, KC-18 (T-11 MOD) mapping camera, KC-9 (T-11/ADAS-2) mapping camera, KD-29 radar recording camera system, KS-74 radar recording camera systems, KS-87 framing camera, T-11 mapping camera system, and the VF-57 viewfinder system, were consistently 20 percent higher than the CONUS group (see Table 37). The same differences applied to maintaining equipment, but much of the variance can be attributed to the fact that 22 percent of the CONUS group was assigned to SAC and maintained equipment not included in the inventory.

Comparison of job satisfaction indicators (see Table 38) show little difference in job interest and utilization of training. Overseas personnel, however, have a higher perception of how well their talents are being utilized, and have a higher percentage showing positive reenlistment intentions.

Conclusion

The majority of differences between CONUS and overseas groups can be at least partially attributed to specific system differences. The general tasks associated with the DAFSC, were found to have about the same percent members performing in both groups.

TABLE 36

EXAMPLES OF DIFFERENCES BETWEEN DAFSC 32252C
CONUS AND OVERSEAS PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	CONUS (N=90)	OVERSEAS (N=17)	DIFFERENCE
E160 MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	59	29	+30
E169 MAKE ENTRIES ON AF FORMS 797 (JOB QUALIFICATION STANDARD CONTINUATION)	19	0	+19
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	52	35	+17
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	17	0	+17
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	16	0	+16
E174 MAKE ENTRIES ON AFTO FORMS 22 (TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY)	14	0	+14
B61 SUPERVISE APPRENTICE ELECTRO-OPTICAL SENSOR SYSTEMS SPECIALIST (AFSC 32232C)	38	24	+14
E148 COMPLETE MAN-HOUR ACCOUNTING RECORDS	26	12	+14
A12 DEVELOP RECORDS, MAINTENANCE, AND DISPOSITION FILES	13	0	+13
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	13	0	+13
J465 REMOVE OR REPLACE FC SYSTEM ON MISSION BAY DOOR	21	71	-50
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	46	94	-48
V806 OPERATIONALLY CHECK EXTRA PICTURE SWITCHES	47	94	-47
J457 REMOVE OR REPLACE FC CASSETTE ROLLERS	6	53	-47
T771 OPERATE ACPC MODULE TEST SETS	20	65	-45
F193 ALIGN OR ADJUST AIRCRAFT CAMERA GEARS	20	65	-45
N597 REMOVE OR REPLACE PC ELECTRONICS ASSEMBLY CONTROLS	14	59	-45
J456 REMOVE OR REPLACE FC BODY COMPONENTS	14	59	-45
J450 OPERATIONALLY CHECK FC SYSTEMS IN SHOP	9	53	-44
J434 BENCH CHECK FC LENS CONE ASSEMBLY	9	53	-44

TABLE 37

COMPARISONS OF SYSTEMS MAINTAINED BY 15 PERCENT OR MORE
DAFSC 322X2C CONUS AND OVERSEAS PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>SYSTEMS MAINTAINED</u>	<u>CONUS MEMBERS (N=90)</u>	<u>OVERSEAS MEMBERS (N=17)</u>
<u>RECONNAISSANCE ELECTRONIC SENSOR SYSTEMS</u>		
AN/AAD-5 INFRARED RECON	52	59
AN/AAS-18 INFRARED RECON	27	6
AN/ASQ-90 DATA DISPLAY SYSTEM	21	12
AN/ASC-154 DATA DISPLAY SYSTEM	43	24
VIEWFINDER	70	77
<u>ELECTRO-OPTICAL CAMERA SYSTEM</u>		
DRIFTSIGHT	16	0
HR308B FRAMING CAMERA	18	0
HR308C FRAMING CAMERA	18	0
IRIS-111	18	0
KA-56 PANORAMIC CAMERA SYSTEM	74	94
KA-91 PANORAMIC CAMERA SYSTEM	74	94
KC-1B (T-11 MOD) MAPPING CAMERA	36	65
KC-9 (T-11/ADAS2) MAPPING CAMERA	10	29
KD-29 RADAR RECORDING CAMERA SYSTEM	44	65
KS-74 RADAR RECORDING CAMERA SYSTEM	31	41
KS-87 FRAMING CAMERA SYSTEM	73	94
OPTICAL BAR CAMERA	17	0
T-11 MAPPING CAMERA SYSTEM	76	94
T-35	18	0
VF-57 VIEWFINDER SYSTEM	69	94

TABLE 38

JOB SATISFACTION INDICATORS FOR 32252C CONUS AND OVERSEAS GROUPS
(PERCENT MEMBERS PERFORMING)

	CONUS 32252C (N=90)	OVERSEAS 32252C (N=17)
<u>EXPRESSED JOB INTEREST:</u>		
DULL	14	17
SO-SO	18	18
INTERESTING	68	65
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		
LITTLE OR NOT AT ALL	26	18
FAIRLY WELL TO PERFECTLY	74	82
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		
LITTLE OR NOT AT ALL	37	35
FAIRLY WELL TO PERFECTLY	63	65
<u>REENLISTMENT INTENTIONS:</u>		
NO, OR PROBABLY NO	41	35
YES, OR PROBABLY YES	59	65

COMPARISON OF CURRENT 322X2C SURVEY TO PREVIOUS SURVEY

The results of the current 322X2C survey were compared to the 1980 occupational survey report (AFPT 90-322-378). As stated in the 322X2A section, this previous survey included all three shreds (A-, B-, and C-shreds) of the 322 AFS. Comparisons were made to career ladder structure DAFSC and TAFMS groups.

Refer to Figure 4, SECTION III (COMPARISON OF CURRENT 322X2A SURVEY TO PREVIOUS SURVEY). Few differences occurred between surveys. As displayed, the figure shows Electro-Optical and Radar Reconnaissance Repairmen, who were separated in the 1980 OSR, were combined in the present survey, and now include Electronic Sensor Systems personnel. Infrared Sensor Systems personnel have been separated from Side-Looking Radar and Reconnaissance Systems Repairman from the previous to the present OSR. This is the same figure which was referenced for the A-shred career ladder structure, however, since both shreds were originally analyzed in the 1980 survey, and since both shreds were found in overlapping systems and tasks, only one figure was necessary.

Differences were found in general background information and job satisfaction indicator areas (see Table 39). Average TAFMS and TICF figures are lower than the 1980 figures, though these differences are not large. There is a significant difference in the percent supervising figures for the 5- and 7-skill levels. Job satisfaction indicators (see Table 40) show differences in all areas, with the most dramatic being in reenlistment intentions for 3- and 5-skill level workers. The number at these skill levels who stated yes, or probably yes, on intent to reenlist has doubled from those figures given for this AFSC in the previous survey.

There has been a change in the number of members at the 3-skill level. There were 12 members in the 1980 sample as opposed to 60 in the current one. In 1980 3-skill levels accounted for only 8 percent of the total 322X2C sample, but cover 29 percent of the current total sample for the AFSC. This is not a significant a change as was found in the A-shred of the 322X2, but does reflect a less experienced maintenance force.

TABLE 39

COMPARISON OF PREVIOUS SURVEY AND CURRENT SURVEY 322X2C TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	<u>1-48 MONTHS</u>		<u>49-96 MONTHS</u>		<u>97+ MONTHS</u>	
	1980 (N=88)	1984 (N=103)	1980 (N=52)	1984 (N=25)	1980 (N=66)	1984 (N=65)
<u>EXPRESSED JOB INTEREST:</u>						
DULL	28	18	28	20	21	8
SO-SO	27	16	30	20	12	15
INTERESTING	45	66	40	60	67	77
<u>PERCEIVED UTILIZATION OF TALENT:</u>						
LITTLE OR NOT AT ALL	48	25	45	28	32	21
FAIRLY WELL TO PERFECTLY	52	74	53	72	66	79
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	42	38	48	52	35	31
FAIRLY WELL TO PERFECTLY	58	61	52	48	65	69
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	71	48	53	20	39	19
YES, OR PROBABLY YES	27	52	40	80	56	80

* May not total 100 percent due to nonresponses or rounding

TABLE 40

COMPARISON OF PREVIOUS SURVEY AND CURRENT SURVEY 322X2C DAFSC GROUPS

	TOTAL SAMPLE		DAFSC 32232C		DAFSC 32252C		DAFSC 32272C	
	1980 (N=209)	1984 (N=193)	1980 (N=13)	1984 (N=21)	1980 (N=130)	1984 (N=109)	1980 (N=66)	1984 (N=63)
<u>GENERAL BACKGROUND INFORMATION:</u>								
AVERAGE MONTHS IN CAREER FIELD	71	70	14	16	44	40	135	140
AVERAGE MONTHS IN SERVICE	83	77	19	23	52	46	157	151
PERCENT SUPERVISING	21%	36%	0%	0%	7%	18%	54%	78%
AVERAGE GRADE	E-4	E-4	E-2	E-3	E-4	E-4	E-6	E-6
<u>JOB SATISFACTION INFORMATION: (PERCENT MEMBERS RESPONDING)</u>								
JOB FAIRLY INTERESTING OR BETTER	51	69	69	71	39	67	71	71
TALENT UTILIZED FAIRLY WELL OR BETTER	57	75	69	71	50	74	70	78
TRAINING UTILIZED FAIRLY WELL OR BETTER	59	62	92	38	53	63	64	68
FAVORABLY CONSIDERING REENLISTMENT	40	65	31	67	32	59	56	76

SECTION V

ANALYSIS OF 404X1 DAFSC GROUPS

Aerospace Photographic Systems (AFSC 404X1) personnel perform maintenance on photographic camera systems, video recorders and cockpit television systems. The variation in 404X1 jobs was discussed earlier (Career Ladder Structure section); in this section, the data is examined from the perspective of skill level (DAFSC) groups.

Skill-Level Descriptions

DAFSCs 40431/40451. Three and 5-skill level personnel, representing 73 percent (297 members) of the 404X1 sample performed an average of 113 tasks, with an average of 73 tasks accounting for 50 percent of their job time. Members spend the greatest percent of their time on technical tasks involving general maintenance duties and repairing and maintaining specific instrument systems, such as aerial video tape recorder (AVTR), ground video tape recorders (GVTR), cockpit television video systems (CVTS), and photographic camera systems. Performing administrative functions accounted for the remainder of their duty time. Typical general maintenance tasks performed included:

- isolating malfunctions on printed circuit cards
- visually inspecting cockpit panels
- safety-wiring systems
- tracing aircraft wiring systems
- aligning or adjusting film supply or take-up mechanisms

Common tasks relating to specific systems maintained were:

- aligning or adjusting AVTR mechanical sections
- operationally checking CTVSs
- bench checking GVTR
- removing or replacing video tape cassettes in aircraft
- isolating malfunctions on AVTR electronic components
- removing or replacing CTVS on aircraft

Table 41 presents additional representative tasks by percent members performing. Note that the system specific tasks are typically performed by 60 percent or less where many of the general maintenance tasks have higher percentages (61 to 82 percent). This difference reflects some system specialization within the 404X1 population at the 3- and 5-skill level.

AD-A144 995

AVIONIC SENSOR SYSTEMS AND AEROSPACE PHOTOGRAPHIC
SYSTEMS REPAIR CAREER L. (U) AIR FORCE OCCUPATIONAL
MEASUREMENT CENTER RANDOLPH AFB TX JUL 84

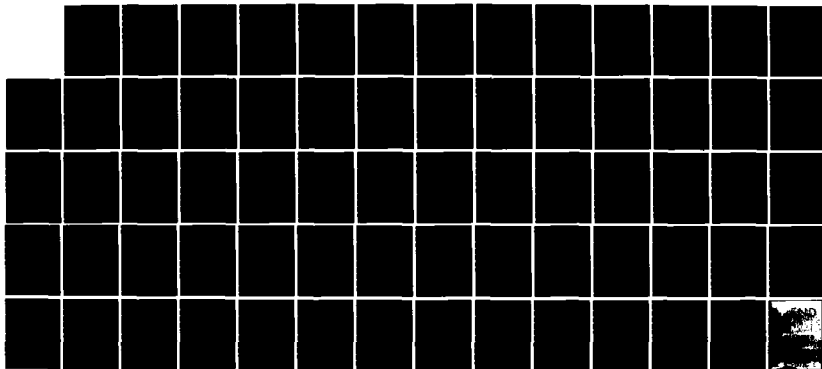
2/2

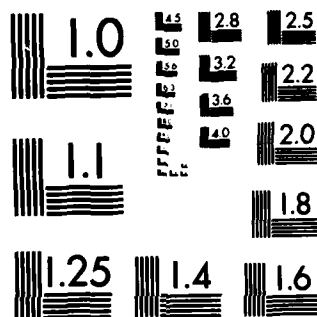
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F/G 5/9

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

DAFSC 40471 (N=78). These personnel perform an average of 135 tasks, with 90 tasks comprising over 50 percent of their job time. This reflects a broader job, while their job is still somewhat technical in nature, there is a clear break from the 5-skill level, with 7-skill level members performing a higher percentage of their time on supervisory, managerial, and training tasks. Members of this group perform training duties at the technical school, Lowry AFB, Colorado, and OJT duties in the field. They hold positions such as NCOIC, assistant NCOIC, or technical supervisor of 404X1 3- and 5-skill level personnel. While percent members performing figures indicate that personnel at the 7-skill level are performing many technical tasks, this may be as a result of the technical supervisory and OJT functions that they perform. This is supported on Table 42 by tasks such as conducting OJT (D116), and demonstrating performance of equipment (D221).

Summary

Career ladder progression is well defined with personnel at the 3- and 5-skill levels spending the vast majority of their time on technical tasks, while 7-skill level members perform largely supervisory, managerial, and training tasks. Table 43 gives examples of tasks which differentiate between the 3-/5 and 7-skill level. Note the boxed areas which clearly display the differences by percent members performing.

TABLE 41

REPRESENTATIVE TASKS PERFORMED BY DAFSC 40431/40451 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=297)
E153 LOCATE PART OR STOCK NUMBERS	82
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	78
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	72
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	71
F237 READ OR INTERPRET WIRING DIAGRAMS	70
F236 RAISE OR LOWER AIRCRAFT CANOPIES	67
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	67
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	67
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	66
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	65
F232 PERFORM VOLTAGE CHECKS	65
F227 PACK OR UNPACK EQUIPMENT	63
O627 OPERATIONALLY CHECK AVTRs	61
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	61
O615 BENCH CHECK AVTRs	60
O611 ASSEMBLE OR DISASSEMBLE AVTRs	59
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	59
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	58
F224 LUBRICATE MECHANICAL COMPONENTS	58
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	57
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	57
O605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	55
O622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	54
O629 OPERATIONALLY CHECK GVTRs	52
W842 INVENTORY CONSOLIDATED TOOL KITS (CTK)	37

Average Number of Tasks Performed - 113

TABLE 42

REPRESENTATIVE TASKS PERFORMED BY DAFSC 40471 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=78)
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	86
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	83
C106 WRITE APRs	82
B58 SUPERVISE AEROSPACE PHOTOGRAPHIC SYSTEMS SPECIALIST (AFSC 40451)	78
A8 DETERMINE WORK PRIORITIES	78
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	78
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	78
C70 SELF-INSPECTIONS OF FACILITIES	78
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	74
A24 PLAN WORK ASSIGNMENTS	73
A18 ESTABLISH WORK PRIORITIES	73
E153 LOCATE PART OR STOCK NUMBERS	73
A3 ATTEND STAFF MEETINGS, OR BOARD MEETINGS	73
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	72
F237 READ OR INTERPRET WIRING DIAGRAMS	72
D116 CONDUCT OJT	72
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	72
A14 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	71
E169 MAKE ENTRIES ON AF FORMS 797 (JOB QUALIFICATION STANDARD CONTINUATION SHEET)	71
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	70
A5 COORDINATE WORK WITH OTHER SECTIONS ON MAINTENANCE OF EQUIPMENT OR COMPONENTS	70
A21 PLAN OR SCHEDULE WORK ASSIGNMENTS	69
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	69
D122 DEMONSTRATE PERFORMANCE OF EQUIPMENT	68

Average Number of Tasks Performed - 135

TABLE 43
TASKS WHICH DIFFERENTIATE BETWEEN 3/5-SKILL AND
7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 40431/51 (N=197)	DAFSC 40471 (N=78)	DIFFERENCE
0642 REMOVE OR REPLACE VTRs ON AIRCRAFT	60	41	+19
F236 RAISE OR LOWER AIRCRAFT CANOPIES	66	47	+19
F190 ADJUST PRINTED CIRCUIT CARDS	44	27	+17
0611 ASSEMBLE OR DISASSEMBLE AVTRs	60	43	+17
F223 ISOLATE MALFUNCTIONS TO PRINTED CIRCUIT CARDS	52	36	+16
0627 OPERATIONALLY CHECK AVTRs	62	46	+16
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	60	44	+16
0064 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	64	39	+15
0628 OPERATIONALLY CHECK CTVSs	44	28	+16
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	62	47	+15
<hr/>			
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	20	70	-50
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	28	78	-50
B37 CONDUCT OR PARTICIPATE IN STAFF MEETINGS	16	67	-51
B50 INITIATE PUNITIVE ACTIONS OR RECOGNITION FOR COMMENDABLE PERFORMANCES	16	68	-52
A2 ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	10	63	-53
E169 MAKE ENTRIES ON AF FORMS 797 (JOB QUALIFICATION STANDARD CONTINUATION)	17	71	-54
A31 SCHEDULE LEAVES OR PASSES	9	63	-54
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	28	86	-58
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	24	83	-59
C106 WRITE APRs	22	82	-60

Average number of tasks performed by 40431/51 personnel - 113
Average number of tasks performed by 40471 personnel - 135

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data was compared to the AFR 39-1 Specialty Descriptions for Aerospace Photographic Systems Specialist (40411/31/51) and Aerospace Photographic Systems Technician (40471), dated 1 January 1982.

The 1-, 3-, and 5-skill level description appears complete and accurately portrays the technical nature of the job. The specialty description for the 7-skill level accurately reflects the combined technical and supervisory nature of the 7-skill level job.

ANALYSIS OF 404X1 TAFMS GROUPS

As discussed in the analysis of the 322X2A and C-shred, first-enlistment (1-48 TAFMS), second-enlistment (49-96 TAFMS), and career (97+ TAFMS), were analyzed to determine significant differences in tasks performed. As time in service increased, there was a corresponding increase in performance of duties involving managerial, supervisory, and training tasks. Career 404X1 personnel, differ from the 322X2A and 322X2C members, since they spend the majority of their job time (56 percent) managing, supervising, training, and administrating, rather than on performance of general, systems, and camera maintenance type tasks.

First-Enlistment Personnel

The first-enlistment group (1-48 months TAFMS) was examined in detail, since the job of this group is the natural target for initial skills training. As show in Table 44, first-enlistment members spend most of their job time performing general avionic sensor and photographic systems maintenance and maintaining video and cockpit television systems. Note that administrative (E tasks) and general maintenance (F tasks) are the primary tasks performed in common. There are, however, some system specific tasks (check AVTRs, remove or replace VTRs, etc.) performed by 50 percent or more of all first-enlistment personnel. This body of commonly performed tasks provides a basis for an effective common training program.

Figure 3, as displayed in SECTION III, shows the distribution of 1-48 months TAFMS group members for all three career ladders across specialty jobs.

Job Satisfaction Data

Before examining training, it may be useful to examine job attitudes for the experienced job attitudes for the experienced groups. Table 45 presents data reflecting the job interest, perceived utilization of talents and training, and reenlistment intentions of TAFMS groups. Comparisons were also made between 404X1 TAFMS groups and comparative samples of all other mission equipment maintenance career ladders surveyed in 1983.

Less 404X1 first-term airmen are interested in their job than the comparative sample group. Fewer of them feel their talents and training are well used in their present job. This trend extends across all TAFMS groups suggesting somewhat less satisfaction with training than for the comparative sample.

TABLE 44

REPRESENTATIVE TASKS PERFORMED BY 404X1 FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=215)
E153 LOCATE PART OR STOCK NUMBERS	80
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	77
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	72
F237 READ OR INTERPRET WIRING DIAGRAMS	71
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	68
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	68
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	66
F236 RAISE OR LOWER AIRCRAFT CANOPIES	66
F232 PERFORM VOLTAGE CHECKS	66
F227 PACK OR UNPACK EQUIPMENT	65
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	62
O627 OPERATIONALLY CHECK AVTRs	59
F224 LUBRICATE MECHANICAL COMPONENTS	59
F252 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	58
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	58
O615 BENCH CHECK AVTRs	57
O611 ASSEMBLE OR DISASSEMBLE AVTRs	56
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	54
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	53
O606 ALIGN OR ADJUST AVTR MECHANICAL SECTIONS	51
F266 TRACK AIRCRAFT WIRING SYSTEMS	51
O605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	51
F225 OPERATE AIRCRAFT POWER UNITS	50
O622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	50
O640 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	50
F258 SAFETY-WIRE EQUIPMENT	50
F223 ISOLATE MALFUNCTIONS TO PRINTED CIRCUIT CARDS	50
O629 OPERATIONALLY CHECK GVTRs	49

Average Number of Tasks Performed - 79

TABLE 45

COMPARISON OF JOB SATISFACTION INDICATORS BY 404X1 TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	(N=215)	COMPARATIVE SAMPLE (N=3,206)	(N=68)	COMPARATIVE SAMPLE (N=1,447)	(N=87)	COMPARATIVE SAMPLE (N=2,200)
<u>EXPRESSED JOB INTEREST:</u>						
DULL	21	10	12	11	14	7
SO-SO	20	18	18	15	17	12
INTERESTING	58	70	69	72	69	79
<u>PERCEIVED UTILIZATION OF TALENT:</u>						
LITTLE OR NOT AT ALL	37	20	22	19	31	15
FAIRLY WELL TO PERFECTLY	63	80	75	81	69	85
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	39	20	29	22	37	19
FAIRLY WELL TO PERFECTLY	60	80	69	77	63	81
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	40	46	32	29	23	8
YES, OR PROBABLY YES	59	53	68	71	76	73

* May not total 100 percent due to nonresponses

** Comparative sample of mission equipment maintenance career ladders surveyed in 1983 (includes AFSCs 30XXX, 31XXX, 32XXX, 34XXX, 36XXX, 40XXX, 42XXX, 43XXX, 44XXX, and 46XXX)

TRAINING ANALYSIS

Specialty Training Standard (STS)

A comprehensive review of STS 404X1, dated December 1981, compared STS items to survey data. STS paragraphs containing general knowledge information or subject-matter knowledge requirements were not evaluated. As explained in the Task Factor Administration section, training emphasis (TE) is a rating collected from senior NCOs in the field of which tasks they believe are most important for structured training. These TE ratings, when matched with percent members performing figures, provide a means of reviewing the career ladder documents. Overall, the STS provides comprehensive coverage of the significant jobs performed by personnel in the field, with survey data supporting significant paragraphs or subparagraphs. One element of the STS does require some discussion. Paragraph 13b(1)(c), Test and Adjustment of Model DBM-4C, reflects low percentages of personnel performing on every task matched to the subelement of the paragraph (see Table 46 for a display of example tasks). Yet, the STS code level for this paragraph is 2b, which means this is somewhat important for first-term airmen. Subject-matter specialists and training personnel should review the tasks and determine if some of the detailed coverage under the paragraph should be reduced.

Table 47 lists 21 tasks which have the highest training emphasis ratings to illustrate the kinds of tasks field supervisors consider should be trained. The majority of the tasks dealt with video and cockpit television systems, and were performed by a majority of first-enlistment personnel. Almost all are being taught at the technical school, with the exception of two as denoted by the asterisk on the table. These tasks should be reviewed for possible inclusion in the course.

Tasks not matched to any element of the STS and which have high TE ratings and high percent members performing are listed in Table 48. These tasks should be reviewed by subject-matter specialists and training personnel for possible inclusion in the STS.

Plan of Instruction (POI)

Based on the previously mentioned assistance from technical school subject-matter specialists in matching inventory tasks to 3ABR40431-001 POI, dated October 1983, a computer product was generated displaying the results of that matching process. Information furnished for consideration includes training emphasis (TE) and task difficulty (TD) ratings, as well as percent members performing data for first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel.

Quite a few objectives under POI blocks concerning fighter and bomber aircraft camera systems (Blocks VII and VIII) are not strongly supported by survey data based on percentages of first-term personnel performing tasks. Table 49 displays examples of tasks identified that have less than 30 percent

of the sample population performing. SAC and TAC have requested that these items continue to be trained despite low percentages performing, yet their associated tasks do not reflect high training emphasis ratings (3.5 or higher) or above average task difficulty. Subject-matter specialists and training personnel should evaluate these units of instruction to determine if retention is justified or if some other training delivery system is more appropriate.

Additionally, there were quite a few apparently significant tasks with high TE ratings and 30 percent or more first-job or first-enlistment personnel performing, that were not matched to POI blocks (see Table 50). This is a good indication that formal training may be required and that resident technical training could be supported, even though the majority of task difficulty ratings are below average.

The discrepancies noted above indicate a need for some substantial revisions for the basic course to ensure that the most relevant areas are taught. A more complete listing of the POI has been forwarded to the school for their use in planning such a revision.

An additional source of information for 404X1 training developers is the recently completed electronics principles inventory (EPI). The EPI is a knowledge-based job inventory which identifies the range of electronics principles personnel need to perform any electronics-oriented job. Table 51 displays the percent of 404X1 personnel reporting use of electronics principles as part of their job. Eighteen subject areas (56 total) were used by 50 percent or more of 404X1 5-skill level personnel. Among these were power supplies, semiconductor diodes, transformers and direct current.

Summary

The STS seems to be fulfilling the needs of the field. Examples of tasks not referenced which had high TE ratings and high percent members performing figures, were supplied for review by technical school personnel. Overall, the STS seems to be a sound training document.

The course POI had several areas which were not found to be supported by survey data. A review of these areas is suggested; this is both in terms of tasks referenced to POI objectives, as well as those not referenced.

EPI knowledge items are utilized by 404X1 personnel and Table 51 supplies examples of electronics principles data with corresponding percent members performing figures to support this.

TABLE 46

STS PARAGRAPH REFLECTING LOW TASK PERFORMANCE

STS PARA 13B(1)(C)	SELECTED SAMPLE TASKS	TRNG EMPH*	TASK DIFF**	PERCENT MEMBERS PERFORMING		
				1ST ENL (N=215)	DAFSC 40451 (N=225)	DAFSC 40471 (N=78)
TEST AND ADJUST- MENT OF MODEL DBM-4C	Q674 ADJUST MPC BODIES	2.63	5.43	2	4	3
	Q675 ADJUST MPC MAGAZINES	2.32	4.90	3	5	3
	Q688 PERFORM PMC CLUTCH AND BRAKE CHECKS	2.00	5.07	3	4	4
	Q690 PERFORM SPEED AND CURRENT CHECKS ON MPCS	1.64	5.96	2	2	3
	Q691 PERFORM STABILIZATION CHECK ON MPC SYSTEMS	1.59	5.61	1	1	1

* Task training emphasis rating of 3.5 or better is high; task training emphasis rating of 1.8 is average

** Task difficulty rating of 5.00 is average

TABLE 47

TASKS RATED HIGHEST IN TRAINING EMPHASIS FOR 404X1 FIRST ENLISTMENT PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	TRAINING EMPHASIS	TASK DIFFICULTY	FIRST-ENLISTMENT (N=215)
0606 ALIGN OR ADJUST AVTR MECHANICAL SECTIONS	7.09	6.87	51
0605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	7.05	7.10	51
0609 ALIGN OR ADJUST GVTR MECHANICAL SECTION	7.00	7.02	43
0608 ALIGN OR ADJUST GROUND VIDEO TAPE RECORDER (GVTR) ELECTRONICS SECTION	6.95	7.30	44
0611 ASSEMBLE OR DISASSEMBLE AVTRs	6.95	6.30	56
0613 ASSEMBLE OR DISASSEMBLE GVTR SYSTEMS	6.91	6.40	45
0610 ALIGN OR ADJUST SPROCKET OR SPINDLE TENSION ON AVTRs	6.86	6.62	40
0621 ISOLATE MALFUNCTIONS ON AVTR ELECTRONIC COMPONENTS	6.82	7.59	47
0622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	6.82	7.29	50
0626 ISOLATE MALFUNCTIONS ON VIDEO TAPE RECORDER (VTR) WIRING SYSTEMS	6.82	7.46	41
*0636 REMOVE OR REPLACE VIDEO HEAD DRUMS	6.82	7.28	44
0624 ISOLATE MALFUNCTIONS ON CVTR ELECTRICAL COMPONENTS	6.73	7.82	39
0612 ASSEMBLE OR DISASSEMBLE CTVS	6.68	6.46	34
0625 ISOLATE MALFUNCTIONS ON GVTR MECHANICAL COMPONENTS	6.68	7.46	40
0607 ALIGN OR ADJUST COCKPIT TELEVISION VIDEO SYSTEM (CTVS) ELECTRONICS	6.64	7.44	34
0615 BENCH CHECK AVTRs	6.64	5.77	57
0617 BENCH CHECK GVTR	6.59	6.03	48
0627 OPERATIONALLY CHECK AVTRs	6.50	6.00	59
0629 OPERATIONALLY CHECK GVTRs	6.50	6.00	49
0623 ISOLATE MALFUNCTIONS ON CTVSs	6.41	7.86	31
*0614 ASSEMBLE OR DISASSEMBLE TV RECEIVERS OR MONITORS	6.36	6.21	36

* Currently not being taught at the technical school

Average TE = 1.8 SD = 1.7
Average TD = 5.0 SD = 1.0

TABLE 48

TASKS PERFORMED AND NOT REFERENCED TO 404X1 STS
(20 PERCENT OR MORE PERFORMING WITH HIGH TRAINING EMPHASIS--3.57 OR HIGHER)

TASKS	TNG EMPH	FIRST- JOB	PERCENT MEMBERS PERFORMING			TASK DIFF
			FIRST- ENLISTMENT	5-SKILL LEVEL	7-SKILL LEVEL	
O636 REMOVE OR REPLACE VIDEO HEAD DRUMS	6.82	38	44	49	35	7.28
O614 ASSEMBLE OR DISASSEMBLE TV RECIEVERS OR MONITORS	6.36	29	36	41	31	6.21
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	5.86	70	72	70	58	3.96
O641 REMOVE OR REPLACE VTR DRIVE BELTS	5.36	22	30	39	27	5.29
F225 OPERATE AIRCRAFT POWER UNITS	5.27	45	50	51	47	3.96
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	5.27	48	54	60	41	4.15
F189 ADJUST ELECTRICAL COMPONENTS OTHER THAN ON PRINTED CIRCUIT CARDS						
F258 SAFETY-WIRE EQUIPMENT	5.14	26	30	36	32	4.75
F257 REMOVE OR REPLACE WIRING BUNDLES	5.14	47	50	51	45	3.58
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	4.95	23	27	32	35	4.93
O635 REMOVE OR REPLACE CTVs ON AIRCRAFT	4.95	66	66	64	56	3.84
O640 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	4.95	35	38	42	27	5.74
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	4.73	43	50	54	39	4.53
O637 REMOVE OR REPLACE VIDEO RECORDER PALLETS OR MOUNTS	4.59	47	44	45	37	4.24
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	4.59	20	27	31	23	5.53
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	4.55	29	32	33	51	3.72
F261 SET UP TEST STANDS OR BENCHES	4.41	53	58	60	44	3.33
F236 RAISE OR LOWER AIRCRAFT CANOPIES	4.27	28	24	27	32	4.01
F249 REMOVE OR REPLACE LIGHT BUBLS, FUSES, OR CIRCUIT BREAKERS	4.18	66	66	66	47	2.78
F267 VISUALLY INSPECT COCKPIT PANELS	4.18	61	61	63	47	3.08
F190 ADJUST PRINTED CIRCUIT CARDS	4.09	37	41	43	47	3.55
F202 ALIGN OR ADJUST SPROCKET OR SPINDLE TENSION ON FILM CAMERA SYSTEMS	4.05	36	39	44	27	4.93
F191 ADJUST VOLTAGES IN POWER SUPPLIES	4.05	23	23	24	24	4.40
F201 ALIGN OR ADJUST PRESSURE PLATE TENSION	4.00	33	36	35	28	4.80
P656 REMOVE OR REPLACE GC BODY COMPONENTS	3.96	22	22	24	22	3.99
K471 ADJUST RRC MAGAZINES	3.96	26	28	28	23	4.27
K479 ISOLATE MALFUNCTIONS ON RRC BODIES	3.91	20	17	20	15	3.95
K481 ISOLATE MALFUNCTIONS ON RRC MAGAZINES	3.91	26	21	24	17	5.10
	3.91	21	17	21	15	4.43

Average TE = 1.8 SD = 1.7

Average TD = 5.0 SD = 1.0

TABLE 49

POI BLOCKS REFLECTING LOW FIRST ENLISTMENT TASK PERFORMANCE
(LESS THAN 30 PERCENT PERFORMING)

POI REFERENCE BLOCK-UNIT	TASKS	PERCENT MEMBERS PERFORMING			
		TNG EMPH	TASK DIFF	FIRST JOB (N=145)	FIRST ENLISTMENT (N=215)
VII 1D GIVEN A BORESIGHT HOLDING FIXTURES, A BORESIGHT TOOL ASSEMBLY, A KD-42A CAMERA BODY AND AN LD-70A PERI- SCOPE, AS A TEAM MEMBER PERFORM FOCUSING AND BORE- SIGHTING PROCEDURES WITHOUT ERROR USING TO 10A1-4-15- 32.	K478 FOCUS RRCS	2.86	4.68	6	6
	K477 BORESIGHT RRC USING OPTICAL BORESIGHTING FIXTURE	2.41	4.78	7	5
VII 3D GIVEN AN LB-16A FILM MAGA- ZINE AND 70MM DUMMY FILM, PERFORM LOADING PROCEDURES WITHOUT ERROR USING TO 10A1-6-6-2.	S472 LOAD OR UNLOAD FILM IN SC MAGAZINE USING DARKROOM PROCEDURES	2.73	4.17	9	10
	S743 LOAD OR UNLOAD FILM IN SC MAGAZINE USING SUBDUED LIGHT PROCEDURES	2.41	3.76	7	8
*VII 3E GIVEN A KB-18A WIRING SIMU- LATOR AN LB-15B CAMERA BODY, AN LB-16A FILM MAGAZINE, AN LB-17A CONTROL BOX, PERFORM PERFORM THE SYSTEMS TEST WITHOUT ERROR USING TO 10A1-6-6-2.	S752 TEST SC SYSTEMS USING LS-83A TEST SETS	3.23	4.76	10	11
	S730 ADJUST SC BODIES	3.00	4.91	6	7
	S731 ADJUST SC CONTROL BOXES	3.00	4.89	9	9
	S733 BENCH CHECK SC BODIES	2.91	4.44	10	11
	S734 BENCH CHECK SC CONTROL BOXES	2.91	4.55	10	11
	S732 ADJUST SC MAGAZINES	2.68	4.83	8	9
	S735 BENCH CHECK SC MAGAZINES	2.68	4.44	10	12

TABLE 49 (CONTINUED)

POI BLOCKS REFLECTING LOW FIRST ENLISTMENT TASK PERFORMANCE
(LESS THAN 30 PERCENT PERFORMING)

POI REFERENCE BLOCK-UNIT	TASKS	PERCENT MEMBERS PERFORMING		
		TNG EMPH	FIRST TASK DIFF	FIRST JOB ENLISTMENT (N=215)
VIII 1D GIVEN AN LD-45A FILM MAGAZINE, PERFORM LOADING PROCEDURES WITHOUT ERROR USING TO 10A1-4-4-1.	K478 FOCUS RRCS K477 BORESIGHT RRC USING OPTICAL BORE-SIGHTING FIXTURE	2.86 2.41	4.68 4.78	6 7
VIII 2A GIVEN A K-17 CAMERA, DISASSEMBLE AND REASSEMBLE WITHOUT ERROR THE K-17 USING TO 10A1-5-2-23.	R701 ADJUST BC INTERVALOMETERS R704 BENCH CHECK BC BODIES R703 ADJUST BC MAGAZINES R706 BENCH CHECK BC MAGAZINES R702 ADJUST BC LENS CONE ASSEMBLIES R705 BENCH CHECK BC LENS CONE ASSEMBLIES R700 ADJUST BC BODIES R707 BENCH CHECK BC SHUTTER ASSEMBLIES	3.36 3.32 3.23 3.09 2.91 2.91 2.82 2.46	5.88 4.53 4.15 4.21 4.41 4.36 4.52 4.73	9 10 9 9 8 8 8 8
VIII 2B GIVEN AN A-9B MAGAZINE, DISASSEMBLE AND REASSEMBLE WITHOUT ERROR THE A-9B USING TO 10A1-4-6-23.	R701 ADJUST BC INTERVALOMETERS R704 BENCH CHECK BC BODIES R703 ADJUST BC MAGAZINES R706 BENCH CHECK BC MAGAZINES R702 ADJUST BC LENS CONE ASSEMBLIES R705 BENCH CHECK BC LENS CONE ASSEMBLIES R700 ADJUST BC BODIES R707 BENCH CHECK BC SHUTTER ASSEMBLIES	3.36 3.32 3.23 3.09 2.91 2.91 2.82 2.46	5.88 4.53 4.15 4.21 4.41 4.36 4.52 4.73	9 10 9 9 8 8 8 8

TABLE 49 (CONTINUED)

POI BLOCKS REFLECTING LOW FIRST ENLISTMENT TASK PERFORMANCE
(LESS THAN 30 PERCENT PERFORMING)

POI REFERENCE BLOCK-UNIT	TASKS	PERCENT MEMBERS PERFORMING			
		TNG EMPH	TASK DIFF	FIRST JOB (N=145)	FIRST ENLISTMENT (N=215)
VIII 2C GIVEN A B-8A INTERVAL- OMETERS, AS A TEAM MEMBER DISASSEMBLE AND REASSEMBLE WITHOUT ERROR THE B-8B USING TO 10A5-6-5-13.	R701 ADJUST BC INTERVALOMETERS	3.36	5.88	12	9
	R704 BENCH CHECK BC BODIES	3.32	4.53	12	10
	R703 ADJUST BC MAGAZINES	3.23	4.15	12	9
	R706 BENCH CHECK BC MAGAZINES	3.09	4.21	12	9
	R702 ADJUST BC LENS CONE ASSEMBLIES	2.91	4.41	10	8
	R705 BENCH CHECK BC LENS CONE ASSEMBLIES	2.91	4.36	11	8
	R700 ADJUST BC BODIES	2.82	4.52	11	8
	R707 BENCH CHECK BC SHUTTER ASSEMBLIES	2.46	4.73	10	8
*VIII 2D GIVEN AN A-98 MAGAZINE AND DUMMY FILM, AS A TEAM MEMBER LOAD MAGAZINE WITHOUT ERROR USING TO 10A2-4-6-21.	R715 LOAD OR UNLOAD FILM IN BC MAGAZINES	2.86	4.05	13	10
*VIII 2E GIVEN AN LM-21 TEST SET AND A B-8B INTERVALOMETER, AS A TEAM MEMBER PERFORMING OPERA- TIONAL CHECK OF THE B-8B WITHOUT ERROR USING TO	F206 CALIBRATE PHOTOGRAPHIC TEST SETS	4.14	5.64	17	20
	F728 TEST BC INTERVALOMETERS USING LM-21 INTERVALOMETER TEST SETS	3.36	5.09	13	10
	R717 OPERATIONALLY CHECK BC SYSTEM ON AIRCRAFT	3.27	4.52	12	9
	R716 OPERATIONALLY CHECK BC SYSTEM IN SHOP	3.04	4.38	12	9
	R718 OPERATIONALLY CHECK BC VACUUM SYSTEMS	2.82	4.48	10	8

* Course personnel have chosen to continue training on the following low-utilization equipment: K-17 camera and test set, and KB-18A camera and test set. SAC requested training on the former and TAC on the latter. Training consists of about 2 days each, and branch managers believe this training is more practical and cost-effective than would be follow-on or FTD training.

Average TE is 1.8; standard deviation is 1.7; High TE = 3.5 or greater
Average TD is 5.0; standard deviation is 1.0

TABLE 50

SELECTED TASKS NOT REFERENCED TO 3ABR40431-001 POI BLOCKS
(30 PERCENT OR MORE PERFORMING)

TASKS	TRAINING EMPHASIS*	TASK DIFFICULTY**	PERCENT MEMBERS PERFORMING	
			FIRST JOB (N=145)	FIRST ENLISTMENT (N=215)
O611 ASSEMBLE OR DISASSEMBLE AVTRs	6.59	6.30	49	56
O613 ASSEMBLE OR DISASSEMBLE GVTR SYSTEMS	6.91	6.40	37	45
O626 ISOLATE MALFUNCTIONS ON VIDEO TAPE RECORDER (VTR) WIRING SYSTEMS	6.82	7.46	32	41
O636 REMOVE OR REPLACE VIDEO HEAD DRUMS	6.82	7.28	36	44
F266 OPERATE GROUND OR EXTERNAL POWER UNITS	5.86	5.96	70	72
O641 REMOVE OR REPLACE VTR DRIVE BELTS	5.36	5.29	22	30
F225 OPERATE AIRCRAFT POWER UNITS	5.27	3.96	45	50
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	5.27	4.15	48	54
F189 ADJUST ELECTRICAL COMPONENTS OTHER THAN ON PRINTER CIRCUIT CARDS				
F258 SAFETY-WIRE EQUIPMENT	5.14	4.75	26	30
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	5.14	3.58	47	50
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	4.95	3.55	60	68
O635 REMOVE OR REPLACE CTVs ON AIRCRAFT	4.95	3.84	66	67
O639 REMOVE OR REPLACE VIDEO TAPE CASSETTES IN AIRCRAFT	4.95	5.74	35	38
F210 CONSTRUCT CABLES OR TEST PLUGS	4.86	3.49	42	49
O640 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	4.73	5.23	34	35
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	4.73	4.53	43	50
D122 DEMONSTRATE OPERATION OF EQUIPMENT	4.59	4.24	47	44
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	4.55	4.83	35	38
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	4.55	3.72	29	32
F236 RAISE OR LOWER AIRCRAFT CANOPIES	4.41	3.33	53	58
F429 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	4.18	2.78	66	66
F267 VISUALLY INSPECT COCKPIT PANELS	4.18	3.08	61	61
F190 ADJUST PRINTED CIRCUIT CARDS	4.09	3.55	37	41
F191 ADJUST VOLTAGES IN POWER SUPPLIES	4.05	4.93	36	39
E148 COMPLETE MAN-HOUR ACCOUNTING RECORDS	4.00	4.80	33	36
	3.77	4.50	37	34

* TE rating of 3.5 or better is high

** TD rating of 5.00 is average

TABLE 51

EXAMPLES OF ELECTRONICS PRINCIPLES INVENTORY (EPI) ITEMS
FOR 404X1 PERSONNEL
BY PERCENT MEMBERS PERFORMING

<u>SUBJECT AREA</u>	<u>PERCENT USING (N=42)</u>
DIRECT CURRENT	100
METERS/MULTIMETERS	98
SOLDERING OR SOLDERLESS CONNECTIONS	95
RESISTANCE AND RESISTIVE CIRCUITS	93
MATHEMATICS	83
ALTERNATING CURRENT	83
OSCILLOSCOPES	79
RELAYS	76
TRANSISTORS	74
SOLID-STATE SPECIAL PURPOSE DEVICES	69
POWER SUPPLIES	62
SIGNAL GENERATORS	62
MOTORS AND GENERATORS	60
TELEVISION	60
SEMICONDUCTOR DIODES	57
INDUCTORS AND INDUCTIVE REACTANCE	52
TRANSFORMERS	52
SPECIAL PURPOSE ELECTRON TUBES	50

MAJCOM COMPARISONS

Tasks and background data for personnel of the five major commands (MAJCOM) with the largest 404X1 populations were compared to determine whether job content varied as a function of MAJCOM assignment.

Many of the basic general maintenance tasks and procedures were performed in common by relatively high percentages of personnel in all commands except ATC (see Table 52 for a display of selected common tasks). Table 53 reflects specific selected tasks which indicate certain command job orientations. Notable major differences are discussed below.

Strategic Air Command (SAC)

Personnel in SAC spend a greater portion of their job time maintaining radar recording camera (RRC) and bombspotting camera (BC) systems than their other MAJCOM counterparts (see Table 53). SAC respondents are also distinguished by not having any members performing maintenance on side-looking radar (SLR), infrared (IR), data display, framing camera (FC), viewfinder, panoramic camera (PC), gun camera (GC), and motion picture camera (MPC) systems. Eleven percent of all 404X1s surveyed are assigned to SAC. They performed an average of only 48 tasks, which is the lowest of the five major commands.

Tactical Air Force (TAF) Components

Members of these three commands (TAC, USAFE, and PACAF) displayed many similarities (see Table 53) and are discussed as a common group. They spend the majority of their duty time maintaining video and cockpit television systems (see Tables 52 and 53), and account for 30 percent of the 404X1 sample. Members in TAC and USAFE average approximately 70 tasks, while PACAF members average 145. The difference in the average number of tasks performed is primarily related to tasks involving motion picture cameras (MPC) which personnel assigned to PACAF seem to be performing, but in small numbers. In other words, they perform more tasks but most of those tasks have 10 percent or less, members performing.

Air Training Command (ATC)

ATC sample personnel are distinguished from the other MAJCOMs by the dominance of training activity (see Table 53) and the limited amount of involvement with camera systems maintenance. ATC personnel perform an average of 63 tasks which (as displayed in Table 53) are primarily training oriented.

As was true of the 322X2A and 322X2C career ladders, 404X1 personnel share a common core of administrative, supervisory, managerial, and training tasks, as well as the technical general maintenance tasks (see Table 53).

The average paygrade for all commands is E-4, with the exception of ATC which is E-5. PACAF is an overseas command, however, as discussed in the next section, no major differences were found between CONUS and overseas groups.

TABLE 52

EXAMPLES OF COMMON TECHNICAL TASKS PERFORMED ACROSS 404X1 MAJCOM GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	TAC (N=198)	SAC (N=43)	USAFE (N=67)	PACAF (N=29)	ATC (N=17)
F189 ADJUST ELECTRICAL COMPONENTS OTHER THAN ON PRINTED CIRCUIT CARDS	25	46	34	38	24
F207 CLEAN AIRCRAFT CAMERA COMPARTMENTS	37	74	30	45	12
F208 CLEAN MIRRORS OR LENS WITH STATIC HAIR BRUSHES OR COMPRESSED AIR	48	70	34	36	12
F210 CONSTRUCT CABLES OR TEST PLUGS	31	42	39	38	18
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	59	77	52	62	6
F222 ISOLATE MALFUNCTIONS TO ELECTRICAL RELAY PANELS	32	51	34	62	12
F224 LUBRICATE MECHANICAL COMPONENTS	55	91	43	59	18
F225 OPERATE AIRCRAFT POWER UNITS	49	51	49	76	6
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	76	65	63	83	6
F227 PACK OR UNPACK EQUIPMENT	59	79	58	79	12
F228 PERFORM CORROSION CONTROL ON LINE REPLACEABLE UNITS (LRU)	40	42	52	38	12
F229 PERFORM CORROSION CONTROL ON SYSTEMS COMPONENTS IN AIRCRAFT	28	54	43	48	6
F230 PERFORM CORROSION CONTROL ON TEST EQUIPMENT	35	44	46	62	24
F232 PERFORM VOLTAGE CHECKS	62	70	63	69	35
F237 READ OR INTERPRET WIRING DIAGRAMS	70	77	72	90	24
F242 REMOVE OR REPLACE CAMERA SYSTEM ELECTRIC MOTORS	34	47	27	35	18
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	63	77	69	76	18
F246 REMOVE OR REPLACE ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS, OTHER THAN ON PRINTED CIRCUIT CARDS	25	30	46	28	12
F247 REMOVE OR REPLACE FILTERS ON LENS	43	42	39	55	6
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	57	91	51	62	24
F254 REMOVE OR REPLACE SYSTEM MOUNTS ON AIRCRAFT	28	28	28	41	6
F264 TEST ELECTRONIC COMPONENTS SUCH AS TRANSISTORS, DIODES, OR RESISTORS	40	44	61	48	23
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	74	61	61	72	6
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	36	37	49	38	6

TABLE 53

EXAMPLES OF TASKS DISPLAYING DIFFERENCES BETWEEN 404X1 MAJCOM GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	SAC (N=43)	TAC (N=198)	USAFE (N=67)	PACAF (N=29)	ATC (N=17)
K481 ISOLATE MALFUNCTIONS ON RRC MAGAZINES	84	10	6	3	18
K471 ADJUST RRC MAGAZINES	81	12	6	3	12
K494 REMOVE OR REPLACE RRC BODIES	81	17	6	3	12
K497 REMOVE OR REPLACE RRC FILM MAGAZINE COMPONENTS	81	13	3	3	12
K479 ISOLATE MALFUNCTIONS ON RRC BODIES	79	19	5	3	12
R715 LOAD OR UNLOAD FILM IN BC MAGAZINES	81	1	0	3	6
R719 REMOVE OR REPLACE BC BODIES	79	1	0	3	6
R725 REMOVE OR REPLACE BC MAGAZINES	76	1	0	3	12
F701 ADJUST BC INTERVALOMETERS	65	1	0	3	6
R704 BENCH CHECK BC BODIES	72	1	0	7	18
O605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR)					
ELECTRICAL SECTIONS					
O606 ALIGN OR ADJUST AVTR MECHANICAL SECTIONS	2	55	72	76	24
O615 BENCH CHECK AVTRs	0	55	72	76	24
O616 BENCH CHECK CTVs	0	61	76	79	24
O621 ISOLATE MALFUNCTIONS ON AVTR ELECTRONIC COMPONENTS	0	41	52	41	24
O622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	0	50	73	66	24
O617 BENCH CHECK GVTR	0	55	70	62	24
O613 ASSEMBLE OR DISASSEMBLE GVTR SYSTEMS	0	44	58	59	29
O629 OPERATIONALLY CHECK GVTRs	0	35	60	55	18
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	0	53	76	72	24
D111 ADMINISTER TESTS	0	58	72	76	4
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	2	5	6	7	77
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	21	28	34	31	71
D117 CONDUCT RESIDENT COURSE CLASSROOM TRAINING	35	40	37	52	71
D131 EVALUATE PROGRESS OR RESIDENT COURSE STUDENTS	0	2	5	3	65
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	0	2	3	3	59
D137 PREPARE LESSON PLANS	28	21	22	35	53
D143 SELECT INDIVIDUALS FOR SELECTED TRAINING	7	2	6	10	53
	0	11	12	24	52

ANALYSIS OF 40451 CONUS VERSUS OVERSEAS

Comparisons were made of tasks performed, percent members performing those tasks, and background data for the 154 DAFSC 40451 personnel assigned to the continental United States (CONUS) versus the 71 members assigned to overseas locations. After a careful analysis of these variables, it became clear that few differences existed. Personnel overseas tend to perform a slightly higher average number of tasks (103) than CONUS personnel (85), however, a review of these tasks showed that no significant differences existed between CONUS and overseas groups.

COMPARISON OF CURRENT 404X1 SURVEY TO PREVIOUS SURVEY

The results of this survey for 404X1 personnel were compared to those of Occupational Survey Report (OSR) AFPT 90-404-206, dated 15 November 1976. Comparisons were made to career ladder structure, DAFSC, and TAFMS groups.

Figure 5 displays the comparison of the career ladder structure applicable to most 404X1 personnel in 1984 and that of the 1976 sample. The current data depicts two clusters which basically consist of all the groupings found in 1976. The clusters did not center around types of aircraft (i.e., bombers, fighters, attack and observation, etc.), but, rather, on specific systems and associated tasks. The addition of the cockpit television video systems represents a major change from the last study. This reflects a changing field which may help explain the need for training revisions.

Review of Table 54 indicates that most 1984 DAFSC groups possess fewer average total months in the career and total months in service than their 1976 counterparts. The sample population figures for 3-, 5-, and 7-skill level personnel strength was much larger than the last OSR. Supervisory responsibilities have increased for 7-skill level members. A decrease occurred at the 3-skill level, probably as a result of the decline in average months in career field and service. Job satisfaction indicator comparisons reflect slightly higher indications for most 1984 groups. The 3-skill level personnel, however, found their job less interesting. In referencing Tables 7 and 8, it is likely that incumbents who found their jobs dull are maintaining either strike camera or bombspotting camera systems.

Other than changes in general background areas, as displayed in Table 54 and the difference in reenlistment intentions for DAFSC 40431 personnel, no significant changes in job satisfaction data were noted.

FIGURE 5
COMPARISON OF PRESENT OSR TO 1976 SURVEY
FOR 404X1 CAREER LADDER

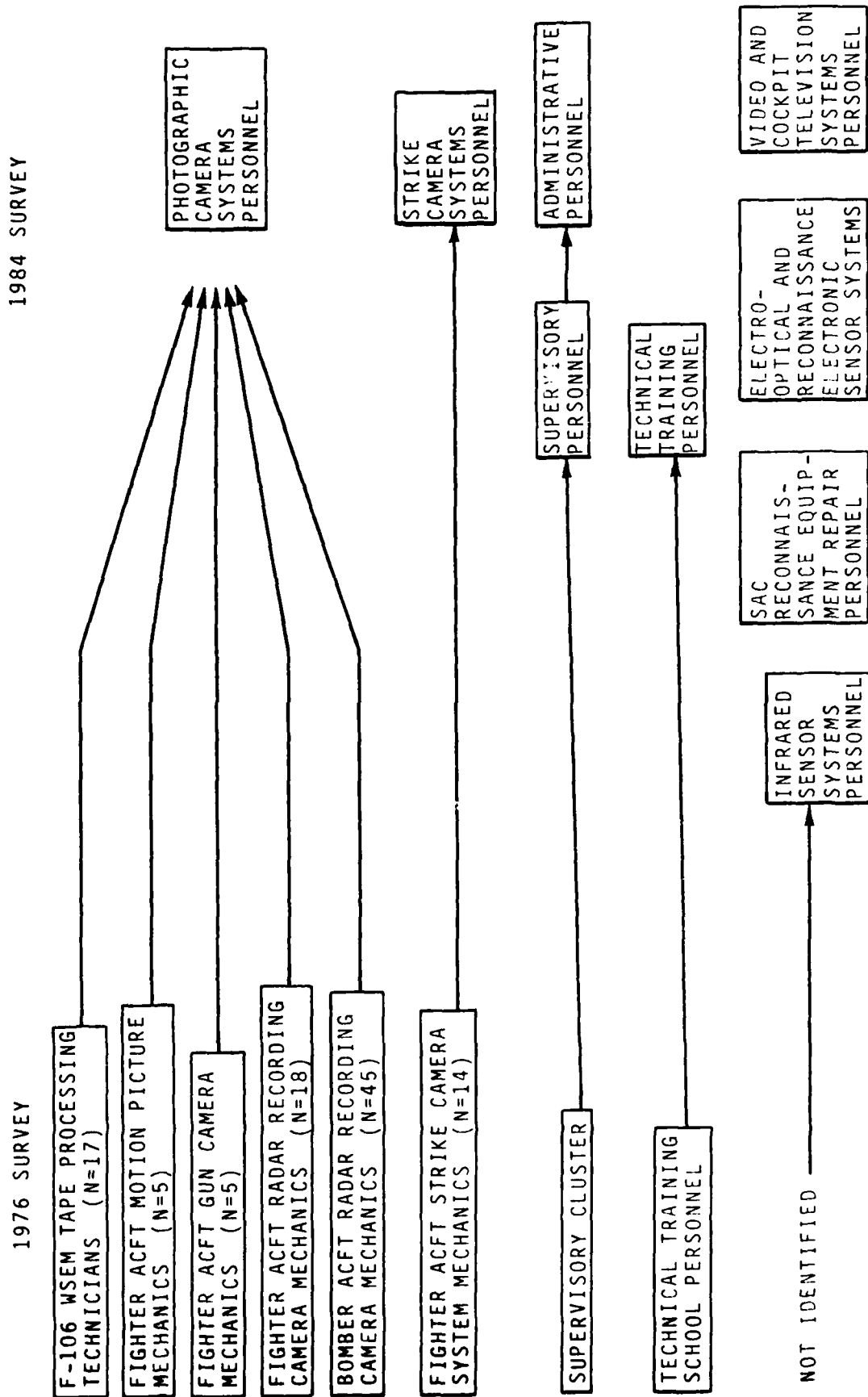


TABLE 54

COMPARISON OF PREVIOUS SURVEY AND CURRENT SURVEY 404X1 DAFSC GROUPS

	TOTAL SAMPLE		DAFSC 40431		DAFSC 40451		DAFSC 40471	
	1976 (N=136)	1984 (N=375)	1976 (N=10)	1984 (N=72)	1976 (N=76)	1984 (N=225)	1976 (N=50)	1984 (N=78)
<u>GENERAL BACKGROUND INFORMATION:</u>								
AVERAGE MONTHS IN CAREER FIELD	62	44	21	14	42	30	101	110
AVERAGE MONTHS IN SERVICE	98	63	40	29	60	42	167	155
AVERAGE NUMBER OF PERSONNEL SUPERVISED	37%	36%	20%	11%	21%	26%	66%	89%
AVERAGE GRADE	E-5	E-4	E-3	E-3	E-4	E-4	E-6	E-6
<u>JOB SATISFACTION INFORMATION: (PERCENT MEMBERS RESPONDING)</u>								
JOB FAIRLY INTERESTING OR BETTER	52	63	80	61	45	63	58	64
TALENT UTILIZED FAIRLY WELL OR BETTER	47	67	60	65	45	66	48	69
TRAINING UTILIZED FAIRLY WELL OR BETTER	44	63	40	63	46	64	42	59
FAVORABLY CONSIDERING REENLISTMENT	63	65	(40)	68	54	61	80	72*

* 13 percent plan on retiring; 14 percent are undecided

CONCLUSIONS

As stated in the INTRODUCTION, this OSR was accomplished in consideration of a possible merger action between the 322X2C and the 404X1 AFSCs. Analysis of the data collected for this survey and discussed in the previous sections, has extracted the following:

1. There is a large core of common tasks (those tasks which are related to Duty F) which have a high percent members performing in all three AFSCs; however, these tasks are extremely general in nature and do not indicate similarity across the three AFSCs.
2. The 322X2A and 322X2C AFSCs have a large degree of overlap in systems maintained; however, tasks performed on those systems are not similar, as displayed in Section II, Table 11. This task specialization is obvious in the table.
3. Members of the 404X1 AFSC have little or no task commonality with either shred of the 322 AFS beyond those general avionic sensor and photographic systems maintenance tasks (examples of which can also be found in Section II, Table 11).
4. Although a large degree of overlap between the two shreds of the 322 AFS seems apparent, it is largely one way. The C-shred seems to be cross-utilized, while A-shred duties tend to be more clearly defined.

This last finding indicates that a merger between the 404X1s and 322X2Cs does not seem to be supported by the data.

Overlap exists between 322X2A and 322X2C personnel. Airmen in the 322X2A spent the majority of their duty time maintaining reconnaissance electronic sensors such as infrared detectors, side-looking radar, data display systems (AN/ASQ-154), and associated sensor control systems. Their experience and knowledge, as extracted from AFR 39-1, is the same as that of the C-shred. Other than general maintenance tasks, there is little overlap in members performing technical tasks and in the systems maintained by 404X1 and 322X2 personnel. Based on the differences between the two shredouts and the 404X1, there appears to be no job-related reason for a merger of the specialties. There is a higher degree of overlap in the A- and C-shreds of the 322X2 AFS; however, such overlap is expected since they are shreds of the same AFS.

All three career fields have a few minor revisions to their STS and POI training documents that technical training school personnel and subject-matter specialists should review. The AFR 39-1 Specialty Descriptions for all three AFSCs, with a few very minor exceptions, were found in good order and supporting the needs of the fields.

The experience level for the 322X2A AFSC was found to be extremely low when compared against the previous survey. The 1980 survey had indicated low reenlistment intentions for senior NCOs and it now seems apparent that the previous survey was a valid predictor. Seventy-two percent of the members in the 322X2A shred are currently in their first enlistment (1-48 months TAFMS). As a result, some 3- and 5-skill level members were found to be performing some supervisory and training functions. One A-shred member who was included in the current survey had been "pipe-lined" into an instructor position at the technical school. This is the term used for a member who becomes an instructor at the 3-skill level, upon completion of the technical school course. (He has since upgraded in skill level). The relatively low level of experience in the 322X2A may be a major problem in terms of having enough experienced (senior) personnel to both maintain operational systems and provide proper training, particularly OJT. Some action may be needed to secure or retain enough experienced personnel to ensure mission accomplishment.

APPENDIX A

TABLE 1
ELECTRO-OPTICAL AND RECONNAISSANCE SENSOR SYSTEMS PERSONNEL
(GRP081)

TASKS	PERCENT MEMBERS PERFORMING (N=251)
F258 SAFETY-WIRE EQUIPMENT	92
F237 READ OR INTERPRET WIRING DIAGRAMS	89
F269 VISUALLY INSPECT LINE REPLACEMENT UNITS (LRU)	88
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	85
F236 RAISE OR LOWER AIRCRAFT CANOPIES	85
H392 REMOVE OR REPLACE IR MAGAZINES	83
H402 REMOVE OR REPLACE IR SYSTEMS	82
F232 PERFORM VOLTAGE CHECKS	82
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	81
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	81
H400 REMOVE OR REPLACE IR RECORDERS	81
H398 REMOVE OR REPLACE IR RECEIVERS	81
E153 LOCATE PART OR STOCK NUMBERS	79
F267 VISUALLY INSPECT COCKPIT PANELS	79
H405 REMOVE OR REPLACE IRPAs	79
F209 CLEAN SENSOR OR CAMERA VIEWING WINDOWS ON AIRCRAFT	78
H406 VISUALLY INSPECT IR SYSTEMS	77
F235 PURGE COOLANT SYSTEMS	76
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	73
N604 VISUALLY INSPECT PC SYSTEMS	71
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	71
V836 SET COUNTERS IN FILM/CART REMAINING PANELS	71
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY	69
J467 VISUALLY INSPECT FC SYSTEMS	66
J464 REMOVE OR REPLACE FC MAGAZINES	66

TABLE 1 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained (10% OR MORE RESPONDING)

RF-4C	91
F-4	11

Major Systems Maintained (25 PERCENT OR MORE PERFORMING)

AN/AAD-5 INFRARED RECON	84
KA-56 PANORAMIC CAMERA SYSTEM	81
KA-91 PANORAMIC CAMERA SYSTEM	79
KS-87 FRAMING CAMERA SYSTEM	79
T-11 MAPPING CAMERA SYSTEM	79
AN/ASC-154 DATA DISPLAY SYSTEMS	74
VF-17 VIEWFINDER SYSTEM	73
VIEWFINDER	70
KD-29 RADAR RECORDING CAMERA SYSTEM	46
KC-1B (T-11 MOD) MAPPING CAMERA	40
KS-74 RADAR RECORDING CAMERA SYSTEM	34
AN/AAS-18 INFRARED RECON	30

Major Equipment Utilized

(25 PERCENT OR MORE PERFORMING)

MULTIMETERS (PSM-6)	87
GROUND POWER UNITS	72
LIGHTS (NF-2)	72
TORQUE WRENCHES	62
FILM REWIND TABLES/FIXTURES	55
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	55
OSCILLOSCOPES	46
RECEIVER HANDLING FIXTURES	41
DIFFERENTIAL VOLTMETERS	41
MD-6D	38
CIRCUIT CARD EXTENDERS	37
NITROGEN PURGE CARTS	36
FREQUENCY COUNTERS	36
STOP WATCHES	36
MD-3	34
KA-56 MAINTENANCE STANDS	28
AMMETERS	28
LS-87 MAINTENANCE TOOL KITS FOR KS-87 OR KA-91	26
MECHANICAL HOISTS	25

TABLE 1a
CRS COMPONENT REPLACEMENT PERSONNEL
(GRP118)

TASKS	PERCENT MEMBERS PERFORMING (N=50)
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	100
L514 ISOLATE MALFUNCTIONS ON VIEWFINDER UPPER HOUSINGS	100
L516 REMOVE OR REPLACE VIEWFINDER DEHYDRATOR DESICANTS	100
T776 REMOVE OR REPLACE ACPC COMPONENTS	98
F192 ALIGN OR ADJUST AIRCRAFT CAMERA FOCAL PLAN SHUTTERS	98
L515 OPERATIONALLY CHECK VIEWFINDER SYSTEMS	98
L528 VISUALLY INSPECT VIEWFINDER SYSTEMS	98
N560 ISOLATE MALFUNCTIONS ON PC BODY	98
L513 ISOLATE MALFUNCTIONS ON VIEWFINDER SYSTEMS	98
L509 ELECTRICALLY ADJUST VIEWFINDERS	98
L510 ISOLATE MALFUNCTIONS ON VIEWFINDER DEHYDRATORS	98
L517 REMOVE OR REPLACE VIEWFINDER DEHYDRATOR MOTOR ASSEMBLIES	98
F232 PERFORM VOLTAGE CHECKS	96
T773 OPERATIONALLY CHECK ACPCs	96
T771 OPERATOR ACPC MODULE TEST SETS	96
T761 ISOLATE MALFUNCTIONS ON ACPCs	96
F237 READ OR INTERPRET WIRING DIAGRAMS	96
E179 MAKE ENTRIES ON AFTO FORMS 95 (SIGNIFICANT HISTORICAL DATA)	96
T756 ADJUST AIRCRAFT CAMERA PARAMETER CONTROLS (ACPC)	96
F197 ALIGN OR ADJUST AIRCRAFT CAMERA SHUTTER MECHANISMS	96
V802 ISOLATE MALFUNCTIONS ON SENSOR CONTROL PANELS #1 or #2	96
N566 ISOLATE MALFUNCTIONS ON PC MAGAZINES	96
V797 ISOLATE MALFUNCTIONS ON INTERVALOMETER PANELS	96
N561 ISOLATE MALFUNCTIONS ON PC CASSETTES	96
L526 REMOVE OR REPLACE VIEWFINDER UPPER HOUSING COMPONENTS	96

TABLE 1a (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE PERFORMING)

RF-4C	92	U-2	10
SR-71	12	F-4	10

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

KA-56 PANORAMIC CAMERA SYSTEMS	100
KS-87 FRAMING CAMERA SYSTEMS	100
KA-91 PANORAMIC CAMERA SYSTEMS	98
T-11 MAPPING CAMERA SYSTEMS	98
VF-17 VIEWFINDER SYSTEMS	98
VIEWFINDER	84
KD-29 RADAR RECORDING CAMERA SYSTEMS	80
KC-1B (T-11 MOD) MAPPING CAMERA	72
KS-74 RADAR RECORDING CAMERA SYSTEMS	54
AN/AAD-5 INFRARED RECON	32

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	98
MULTIMETERS (PSM-6)	96
LS-87 MAINTENANCE TOOL KITS FOR KS-87 OR KA-91	94
VOLTMETERS	92
CIRCUIT CARD EXTENDERS	88
KA-56 MAINTENANCE STANDS	82
LS-110 MAINTENANCE TOOL KITS FOR KA-91	82
FREQUENCY COUNTERS	80
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	78
TORQUE WATCHES	72
STROBOTACS	64
AERIAL CAMERA TS	62
VACUUM GAUGES OR REGULATORS	62
VACUUM TUBE VOLTMETERS (VTVM)	60
FILM REWIND TABLES/FIXTURES	58
GROUND POWER UNITS	58
TORQUE WRENCHES	56
LIGHTS (NF-2)	54
TENSION GAUGES	52
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	44
MD-60	44
DUMMY LOADS	44
AMMETERS	38
MD-3	36
AIR COMPRESSORS	30

TABLE 1b
AGS COMPONENT REPLACEMENT PERSONNEL
(GRP104)

TASKS	PERCENT MEMBERS PERFORMING (N=104)
F236 RAISE OR LOWER AIRCRAFT CANOPIES	98
H392 REMOVE OR REPLACE IR MAGAZINES	97
H402 REMOVE OR REPLACE IR SYSTEMS	97
N587 REMOVE OR REPLACE PC BODIES	95
H400 REMOVE OR REPLACE IR RECORDERS	94
F258 SAFETY-WIRE EQUIPMENT	94
F209 CLEAN SENSOR OR CAMERA VIEWING WINDOWS ON AIRCRAFT	94
H398 REMOVE OR REPLACE IR RECEIVERS	94
H406 VISUALLY INSPECT IR SYSTEMS	92
T777 REMOVE OR REPLACE ACPCs	92
H393 REMOVE OR REPLACE IR POWER SUPPLIES	91
V834 REMOVE OR REPLACE SENSOR CONTROL PANELS #1 OR #2	91
V836 SET COUNTERS IN FILM/CART REMAINING PANELS	89
N604 VISUALLY INSPECT PC SYSTEMS	88
N600 REMOVE OR REPLACE PC MAGAZINES	88
L528 VISUALLY INSPECT VIEWFINDER SYSTEMS	88
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	88
V806 OPERATIONALLY CHECK EXTRA PICTURE SWITCHES	88
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	87
J464 REMOVE OR REPLACE FC MAGAZINES	86
J458 REMOVE OR REPLACE FC CASSETTES	86
J455 REMOVE OR REPLACE FC BODIES	86
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	86
V809 OPERATIONALLY CHECK INTEVALOMETER PANELS	86
J466 REMOVE OR REPLACE FC SYSTEMS FROM AIRCRAFT	85

TABLE 1b (CONTINUED)
SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE PERFORMING)

RF-4C	90	F-4	11
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Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

AN/AAD-5 INFRARED RECON	98
KA-56 PANORAMIC CAMERA SYSTEMS	97
KA-91 PANORAMIC CAMERA SYSTEMS	94
KS-87 FRAMING CAMERA SYSTEMS	94
T-11 MAPPING CAMERA SYSTEMS	94
AN/ASC-154 DATA DISPLAY SYSTEMS	86
VIEWFINDER	85
VF-17 VIEWFINDER SYSTEMS	84
KD-29 RADAR RECORDING CAMERA SYSTEMS	47
AN/AAS-18 INFRARED RECON	42
KC-1B (T-11 MOD) MAPPING CAMERA	40
KS-74 RADAR RECORDING CAMERA SYSTEMS	40
AN/ASQ-90 DATA DISPLAY SYSTEMS	35

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

LIGHT&11S (NF-2)	85
GROUND POWER UNITS	82
MULTIMETERS (PSM-6)	80
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	70
TORQUE WRENCHES	63
FILM REWIND TABLES/FIXTURES	56
RECEIVER HANDLING FIXTURES	39
MD-3	38
NITROGEN PURGE CARTS	38
MD-60	35
MECHANICAL HOISTS	26

TABLE 2
INFRARED SENSOR SYSTEMS PERSONNEL
(GRP212)

TASKS	PERCENT MEMBERS PERFORMING (N=47)
H350 ALIGN IR RECEIVERS	100
H358 BENCH CHECK IR RECEIVERS	100
H355 BENCH CHECK IR MAGAZINES	100
H368 ISOLATE MALFUNCTIONS ON IR RECEIVERS	100
H399 REMOVE OR REPLACE IR RECORDER COMPONENTS	100
H401 REMOVE OR REPLACE IR SENSOR ASSEMBLIES	100
H356 BENCH CHECK IR PERFORMANCE ANALYZERS (IRPA)	100
H354 BENCH CHECK IR CRYOGENIC REFRIGERATORS	100
H351 ALIGN RECORDERS	98
H359 BENCH CHECK IR RECORDERS	98
H360 ELECTRICALLY ADJUST IR RECEIVERS	98
E179 MAKE ENTRIES ON AFTO FORMS 95 (SIGNIFICANT HISTORICAL DATA)	98
H357 BENCH CHECK IR POWER SUPPLIES	98
H367 ISOLATE MALFUNCTIONS ON IR POWER SUPPLIES	98
H366 ISOLATE MALFUNCTIONS ON IR MAGAZINES	98
H361 ELECTRICALLY ADJUST IR RECORDERS	96
H369 ISOLATE MALFUNCTIONS IN IR RECORDERS	96
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	96
H398 REMOVE OR REPLACE IR RECEIVERS	96
H400 REMOVE OR REPLACE IR RECORDERS	96
H392 REMOVE OR REPLACE IR MAGAZINES	96
H372 ISOLATE MALFUNCTIONS USING IR HIT MOCK-UP	96
H397 REMOVE OR REPLACE IR RECEIVERS MIRRORS	96
H391 REMOVE OR REPLACE IR MAGAZINE COMPONENTS	96
H393 REMOVE OR REPLACE IR POWER SUPPLIES	96

TABLE 2 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained (10 PERCENT OR MORE RESPONDING)

RF-4C	94
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Major Systems Maintained (25 PERCENT OR MORE RESPONDING)

AN/AAD-5 INFRARED RECON	100
AN/ASC-154 DATA DISPLAY SYSTEMS	94

Major Equipment Utilized (25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	98
MULTIMETERS (PSM-6)	96
FREQUENCY COUNTERS	94
CIRCUIT CARD EXTENDERS	87
DESITOMETERS	81
DIFFERENTIAL VOLTMETERS	81
MICROSCOPES	75
STOP WATCHES	75
RECEIVER HANDLING FIXTURES	68
TORQUE WRENCHES	62
GROUND POWER UNITS	55
LIGHT&11S (NF-2)	51
FILM REWIND TABLES/FIXTURES	47
COLLIMATORS	47
DUMMY LOADS	47
NITROGEN PURGE CARTS	45
MD-60	43
SIGNAL GENERATORS	36
GREASE GUNS	36
AMMETERS	36
MECHANICAL HOISTS	30
VACUUM TUBE VOLTMETERS (VTVM)	30
MAINTENANCE STANDS (B-4, N-5)	28

TABLE 3
SAC RECONNAISSANCE EQUIPMENT REPAIR PERSONNEL
(GRP049)

TASKS	PERCENT MEMBERS PERFORMING (N=76)
F258 SAFETY-WIRE EQUIPMENT	92
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	91
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	86
F232 PERFORM VOLTAGE CHECKS	86
F270 VISUALLY INSPECT MISSION BAYS	84
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	83
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	79
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	78
E153 LOCATE PART OR STOCK NUMBERS	78
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	76
F237 READ OR INTERPRET WIRING DIAGRAMS	76
F259 SALVAGE WASTE FILM	72
G343 REMOVE OR REPLACE SLR RECORDERS	70
F227 PACK OR UNPACK EQUIPMENT	70
G336 REMOVE OR REPLACE SLR MAGAZINES	68
G339 REMOVE OR REPLACE SLR RECEIVERS	68
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	67
F224 LUBRICATE MECHANICAL COMPONENTS	67
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	67
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	67
G347 REMOVE OR REPLACE SLR WAVEGUIDES	66
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	65
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	64
F223 ISOLATE MALFUNCTIONS TO PRINTED CIRCUIT CARDS	61
F254 REMOVE OR REPLACE SYSTEM MOUNTS ON AIRCRAFT	57

TABLE 3 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

SR-71	92
TR-1	22
U-2	21
RF-4C	12

Major Systems Maintained
(25 PERCENT OR MORE PERFORMING)

NO DATA AVAILABLE

Major Equipment Utilized
(25 PERCENT OR MORE PERFORMING)

OSCILLOSCOPES	95
TORQUE WRENCHES	92
DIFFERENTIAL VOLTMETERS	88
MULTIMETERS (PSM-6)	88
AIR GUNS	87
NITROGEN PURGE CARTS	87
FREQUENCY COUNTERS	84
NOSE DOLLY ASSEMBLIES	82
DUMMY LOADS	82
CIRCUIT CARD EXTENDERS	80
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	78
LOWBOY TRAILERS	76
MAP PROJECTORS	70
GA-531B SIDE LOOKING RADAR	68
MAINTENANCE DOLLIES	67
MECHANICAL HOISTS	65
VACUUM TUBE VOLTMETERS (VTVM)	65
RF POWER UNITS	63
RECORDING-COLLILATOR DISPLAY (RCD)	62
SIGNAL GENERATORS	59
AMMETERS	58
VIEWSIGHT	55
MICROMETERS	55
ELECTRIC HOISTS	53
GREASE GUNS	53
MICROWAVE ATTENUATORS	53
FILM REWIND TABLES/FIXTURES	51
DENSITOMETERS	51
PYROMETERS	51
VACUUM GAUGES OR REGULATORS	49
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	47
CHART RECORDERS	47
TENSION GAUGES	47
STOP WATCHES	46
MICROSCOPES	45
UPLOAD/DOWNLOAD PNEUMATIC DOLLIES	40
VIEWFINDER	38
VARIABLE TRANSFORMERS	28

TABLE 4
VIDEO AND COCKPIT TELEVISION SYSTEMS PERSONNEL
(GRP054)

TASKS	PERCENT MEMBERS PERFORMING (N=213)
E153 LOCATE PART OR STOCK NUMBERS	88
O615 BENCH CHECK AVTRs	84
O627 OPERATIONALLY CHECK AVTRs	84
O611 ASSEMBLE OR DISASSEMBLE AVTRs	82
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	81
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	81
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	80
O642 REMOVE OR REPLACE VTRS ON AIRCRAFT	79
F237 READ OR INTERPRET WIRING DIAGRAMS	79
O606 ALIGN OR ADJUST AVTR MECHANICAL SECTIONS	78
F236 RAISE OR LOWER AIRCRAFT CANOPIES	78
O605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	77
O622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	76
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	75
O629 OPERATIONALLY CHECK GVTRs	74
O621 ISOLATE MALFUNCTIONS ON AVTR ELECTRONIC COMPONENTS	74
O617 BENCH CHECK GVTR	73
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	72
O639 REMOVE OR REPLACE VIDEO TAPE CASSETTES IN AIRCRAFT	72
O640 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	72
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	72
O613 ASSEMBLE OR DISASSEMBLE GVTR SYSTEMS	68
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	67
O628 OPERATIONALLY CHECK CTVSs	58
O635 REMOVE OR REPLACE CTVS ON AIRCRAFT	55

TABLE 4 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

F-4	37	F-16	39
F-105	20	A-10	21
F-5	12	F-111	16

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

V-1000AB-R TEAC	75
VG-030 AVTR TEST SET	73
SONY CVM-195	70
V-4200G-N TEAC	69
AN/AXM-8 CTVS TEST SET	53
AN/AXQ-16V	48
LS-107A CAMERA TEST SET	36
KB-25 GUN CAMERA	30
KB-26 GUN CAMERA	25

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	87
MULTIMETERS (PSM-6)	86
AVTR SUPPORT KITS	79
SIGNAL GENERATORS	79
AUDIO SIGNAL GENERATORS	73
GROUND POWER UNITS	70
LIGHTS (NF-2)	66
FREQUENCY COUNTERS	65
GVTR SUPPORT KITS	65
TENSION GAUGES	65
TELEVISION SIGNAL GENERATORS	62
CTVS TOOL KITS	57
AMMETERS	53
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	53
AIR CONDITIONERS	51
MD-60	36
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	35
TORQUE WRENCHES	31
DIFFERENTIAL VOLTMETERS	28
STROBATACS	26

TABLE 4A

VIDEOTAPE RECORDER TROUBLESHOOTING PERSONNEL
(GRP140)

TASKS	PERCENT MEMBERS PERFORMING (N=82)
0615 BENCH CHECK AVTRs	100
0627 OPERATIONALLY CHECK AVTRs	100
0611 ASSEMBLE OR DISASSEMBLE AVTRs	99
0605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	99
0622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	99
0642 REMOVE OR REPLACE VTRs ON AIRCRAFT	98
0621 ISOLATE MALFUNCTIONS ON AVTR ELECTRONIC COMPONENTS	98
0606 ALIGN OR ADJUST AVTR MECHANICAL SECTIONS	96
0640 REMOVE OR REPLACE VTR CONTROL PANELS OR BOXES	93
0617 BENCH CHECK GVTR	91
0629 OPERATIONALLY CHECK GVTRs	90
0608 ALIGN OR ADJUST GROUND VIDEO TAPE RECORDER (GVTR) ELECTRONIC SECTION	90
0609 ALIGN OR ADJUST GVTR MECHANICAL SECTION	89
0613 ASSEMBLE OR DISASSEMBLE GVTR SYSTEMS	89
0639 REMOVE OR REPLACE VIDEO TAPE CASSETTES IN AIRCRAFT	87
E153 LOCATE PART OR STOCK NUMBERS	85
0626 ISOLATE MALFUNCTIONS ON VIDEO TAPE RECORDER (VTR) WIRING SYSTEMS	85
0628 OPERATIONALLY CHECK CTVs	83
0635 REMOVE OR REPLACE CTVs ON AIRCRAFT	81
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	78
F237 READ OR INTERPRET WIRING DIAGRAMS	76
0618 BENCH CHECK TV RECEIVERS OR MONITORS	73
0614 ASSEMBLE OR DISASSEMBLE TV RECEIVERS OR MONITORS	73
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	72

TABLE 4A (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

F-16	48	F-4	12
A-10	24	AC-130	10
F-15	17		

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

SONY CVM-195	89
V-1000AB-R TEAC	84
V-42000-N TEAC	72
AN/AXQ-1 6V	57

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	98
AVTR SUPPORT KITS	93
SIGNAL GENERATORS	92
MULTIMETERS (PSM-6)	88
AUDIO SIGNAL GENERATORS	83
CTVs TOOL KITS	78
GVTR SUPPORT KITS	73
FREQUENCY COUNTERS	70
AMMETERS	59
GROUND POWER UNITS	57
AIR CONDITIONERS	54
LIGHT&11S (NF-2)	50
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	48
MD-60	33
CIRCUIT CARD EXTENDERS	31

TABLE 4b
EQUIPMENT MAINTENANCE AND REPAIR SPECIALISTS
(GRP159)

TASKS	PERCENT MEMBERS PERFORMING (N=36)
P656 REMOVE OR REPLACE GC BODY COMPONENTS	97
F232 PERFORM VOLTAGE CHECKS	97
F258 SAFETY-WIRE EQUIPMENT	97
F236 RAISE OR LOWER AIRCRAFT CANOPIES	94
F224 LUBRICATE MECHANICAL COMPONENTS	94
P665 REMOVE OR REPLACE GC MOTOR MODULES	94
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	94
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	94
P651 OPERATIONALLY CHECK GC ON AIRCRAFT	92
P655 REMOVE OR REPLACE GC BODIES	92
F237 READ OR INTERPRET WIRING DIAGRAMS	92
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	89
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	89
O627 OPERATIONALLY CHECK AVTRs	89
P660 REMOVE OR REPLACE GC ELECTRONIC CONTROL MODULES	89
F251 REMOVE OR REPLACE PRINTED CIRCUIT CARDS	89
P645 ISOLATE MALFUNCTIONS ON GC BODIES	89
O615 BENCH CHECK AVTRs	86
F252 REMOVE OR REPLACE REGISTER PINS	86
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	86
E153 LOCATE PART OR STOCK NUMBERS	86
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	83
O611 ASSEMBLE OR DISASSEMBLE AVTRs	83
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	83
P644 ISOLATE MALFUNCTIONS ON ELECTRONIC CONTROL MODULES	83

TABLE 4b (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained (10 PERCENT OR MORE PERFORMING)

F-4	88	F-16	25
F-5	42	F-15	22
A-10	28		

Major Systems Maintained (25 PERCENT OR MORE RESPONDING)

KB-25 GUN CAMERA	86
V-1000AB-R TEAC	86
V-4200G-N TEAC	81
KB-26 GUN CAMERA	47
KS-97 RADAR RECORDING CAMERA	36

Major Equipment Utilized (25 PERCENT OR MORE RESPONDING)

LIGHT&11S (NF-2)	94
OSCILLOSCOPES	89
MULTIMETERS (PSM-6)	81
SIGNAL GENERATORS	81
GROUND POWER UNITS	75
AVTR SUPPORT KITS	75
AMMETERS	69
AUDIO SIGNAL GENERATORS	69
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	67
TELEVISION SIGNAL GENERATORS	61
AIR CONDITIONERS	58
STROBATICS	56
TENSION GAUGES	53
FREQUENCY COUNTERS	50
SONY CVM-195	47
GVTR SUPPORT KITS	47
MD-60	36
AIR COMPRESSORS	31
FLIGHTLINE MAINTAINENANCE STANDS (B-4, B-5)	31
AERIAL CAMERA TS	31
TORQUE WRENCHES	28
DIFFERENTIAL VOLTMETERS	25

TABLE 4C
VIDEOTAPE RECORDER LINE SUPERVISORS
(GRP109)

TASKS	PERCENT MEMBERS PERFORMING (N=73)
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	93
F237 READ OR INTERPRET WIRING DIAGRAMS	92
E153 LOCATE PART OR STOCK NUMBERS	92
A8 DETERMINE WORK PRIORITIES	92
O627 OPERATIONALLY CHECK AVTRs	89
O615 BENCH CHECK AVTRs	89
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	89
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	89
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	88
B58 SUPERVISE AEROSPACE PHOTOGRAPHIC SYSTEMS SPECIALISTS (AFSC 40451)	86
O642 REMOVE OR REPLACE VTRs ON AIRCRAFT	86
O611 ASSEMBLE OR DISASSEMBLE AVTRs	86
O605 ALIGN OR ADJUST AIRBORNE VIDEO TAPE RECORDERS (AVTR) ELECTRICAL SECTIONS	86
D116 CONDUCT OJT	86
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	86
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	85
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	85
F266 TRACE AIRCRAFT WIRING SYSTEMS	85
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	85
D122 DEMONSTRATE OPERATION OF EQUIPMENT	84
O622 ISOLATE MALFUNCTIONS ON AVTR MECHANICAL COMPONENTS	84
O621 ISOLATE MALFUNCTIONS ON AVTR ELECTRONIC COMPONENTS	84
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	84
F232 PERFORM VOLTAGE CHECKS	84
C101 REVIEW MAINTENANCE DATA COLLECTION RECORDS	82

TABLE 4C (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained (10 PERCENT OR MORE RESPONDING)

F-4	53	RF-4C	15
F-16	47	B-52G	12
A-10	25	F-5	12
F-15	23	B-52H	11

Major Systems Maintained (25 PERCENT OR MORE RESPONDING)

V-1000AB-R TEAC	77
V-4200G-N TEAC	73
AN/AXQ-16V	64
KB-25 GUN CAMERA	40
KB-26 GUN CAMERA	27
KB-18 STRIKE CAMERA	26

Major Equipment Utilized (25 PERCENT OR MORE RESPONDING)

AVTR SUPPORT KITS	89
MULTIMETERS (PSM-6)	86
OSCILLOSCOPES	86
SIGNAL GENERATORS	86
LIGHT&11S (NF-2)	81
FREQUENCY COUNTERS	81
GVTR SUPPORT KITS	81
GROUND POWER UNITS	78
TENSION GAUGES	77
TELEVISION SIGNAL GENERATORS	75
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	73
CTVs TOOL KITS	70
AUDIO SIGNAL GENERATORS	65
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	60
AIR CONDITIONERS	59
MD-60	49
AMMETERS	49
VACUUM TUBE VOLTMETERS (VTVM)	38
STROBATA'S	37
MD-3	34
VARIABLE TRANSFORMERS	32
DUMMY LOADS	29
SWEEP MARKER GENERATORS	29
CIRCUIT CARD EXTENDERS	27
DIFFERENTIAL VOLTMETERS	27
TORQUE WRENCHES	27
TORQUE WATCHES	26

TABLE 5
STRIKE CAMERA SYSTEMS PERSONNEL
(GRP084)

TASKS	PERCENT MEMBERS PERFORMING (N=29)
S745 OPERATIONALLY CHECK SC SYSTEMS ON AIRCRAFT	100
S733 BENCH CHECK SC BODIES	100
S754 UPLOAD OR DOWNLOAD SC SYSTEMS ON AIRCRAFT	97
S744 OPERATIONALLY CHECK SC SYSTEM IN SHOP	97
S734 BENCH CHECK SC CONTROL BOXES	97
F226 OPERATE GROUND OR EXTERNAL POWER UNITS	97
S735 BENCH CHECK SC MAGAZINES	97
S746 REMOVE OR REPLACE SC BODIES	97
E153 LOCATE PART OR STOCK NUMBERS	97
S751 REMOVE OR REPLACE SC MAGAZINES	93
S742 LOAD OR UNLOAD FILM IN SC MAGAZINE USING DARKROOM PROCEDURES	93
S748 REMOVE OR REPLACE SC CONTROL BOX COMPONENTS	93
S737 ISOLATE MALFUNCTIONS ON SC CONTROL BOXES	93
F258 SAFETY-WIRE EQUIPMENT	93
S752 TEST SC SYSTEMS USING LS-83A TEST SETS	90
S755 VISUALLY INSPECT SC SYSTEMS	90
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	90
S740 ISOLATE MALFUNCTIONS TO SC CONTROL BOXES	90
F237 READ OR INTERPRET IWRING DIAGRAMS	90
S749 REMOVE OR REPLACE SC CONTROL BOXES	90
S736 ISOLATE MALFUNCTIONS ON SC BODIES	86
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	86
S739 ISOLATE MALFUNCTIONS TO SC BODIES	86
S731 ADJUST SC CONTROL BOXES	83
S747 REMOVE OR REPLACE SC BODY COMPONENTS	83

TABLE 5 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

F-111	86
F-16	10

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

KB-18 STRIKE CAMERA	90
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Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

MULTIMETERS (PSM-6)	90
TORQUE WRENCHES	86
GROUND POWER UNTIS	79
LIGHT&11S (NF-2)	55
OSCILLOSCOPES	52
FREQUENCY COUNTERS	48
DIFFERENTIAL VOLTMETERS	38
TORQUE WATCHES	38
AERIAL CAMERA TS	35
AMMETERS	31
AUDIO SIGNAL GENERATORS	28

TABLE 6
PHOTOGRAPHIC CAMERA SYSTEMS PERSONNEL
(GRP041)

TASKS	PERCENT MEMBERS PERFORMING (N=65)
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	88
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	85
K490 OPERATIONALLY CHECK RRC SYSTEMS IN SHOP	83
K495 REMOVE OR REPLACE RRC BODY COMPONENTS	82
E153 LOCATE PART OR STOCK NUMBERS	82
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	80
F224 LUBRICATE MECHANICAL COMPONENTS	78
F259 SALVAGE WASTE FILM	78
K491 OPERATIONALLY CHECK RRC SYSTEMS ON AIRCRAFT	77
K501 REMOVE OR REPLACE RRCS FROM AIRCRAFT	77
K479 ISOLATE MALFUNCTIONS ON RRC BODIES	77
K474 BENCH CHECK RRC BODIES	75
K494 REMOVE OR REPLACE RRC BODIES	75
K498 REMOVE OR REPLACE RRC FILM MAGAZINES	72
K483 ISOLATE MALFUNCTIONS TO RRC BODIES	72
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	72
K508 VISUALLY INSPECT RRC SYSTEMS	69
K497 REMOVE OR REPLACE RRC FILM MAGAZINE COMPONENTS	69
K485 ISOLATE MALFUNCTIONS TO RRC MAGAZINES	69
K481 ISOLATE MALFUNCTIONS ON RRC MAGAZINES	69
K471 ADJUST RRC MAGAZINES	68
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	65
K488 OPERATIONALLY CHECK RRC EXPOSURE FREQUENCY CONTROLS IN SHOP	63
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY	62
K487 OPERATIONALLY CHECK RRC EXPOSURE FREQUENCY CONTROLS ON AIRCRAFT	62

TABLE 6 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

B-52G	40
F-4	26
B-52H	22
B-52D	20

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

LM-21 INTERVALOMETER TEST SET	49
LM-61 TEST SET	46
KS-32 RADAR RECORDING CAMERA	45
LM-56A RADAR RECORDING CAMERA TS	26
917FA MOTION PICTURE CAMERA	25

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

MULTIMETERS (PSM-6)	79
GROUND POWER UNITS	59
TORQUE WRENCHES	46
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	45
AMMETERS	29
TENSION GAUGES	29
FILM REWIND TABLES/FIXTURES	28

TABLE 6a
BOMBSPOTTING CAMERA SYSTEMS PERSONNEL
(GRP093)

TASKS	PERCENT MEMBERS PERFORMING (N=33)
R715 LOAD OR UNLOAD FILM IN BC MAGAZINES	97
F224 LUBRICATE MECHANICAL COMPONENTS	97
R709 ISOLATE MALFUNCTIONS ON BC INTERVALOMETERS	97
F199 ALIGN OR ADJUST FILM SUPPORT OR TAKE-UP MECHANISMS	97
F188 ADJUST CONTROLS IN CONTROL BOXES OR INTERVALOMETERS	97
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	97
R725 REMOVE OR REPLACE BC MAGAZINES	94
R717 OPERATIONALLY CHECK BC SYSTEM ON AIRCRAFT	94
R713 ISOLATE MALFUNCTIONS TO BC INTERVALOMETERS	94
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL OG)	94
R719 REMOVE OR REPLACE BC BODIES	94
F216 DELIVER UNPROCESSED FILM MAGAZINES OR TAPES TO PROCESSING AGENCY	91
R701 ADJUST BC INTERVALOMETERS	91
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	91
R728 TEST BC INTERVALOMETERS USING LM-21 INTERVALOMETER TEST SETS	91
E153 LOCATE PART OR STOCK NUMBERS	91
R714 ISOLATE MALFUNCTIONS TO BC MAGAZINES	91
R712 ISOLATE MALFUNCTIONS TO BC BODIES	91
R720 REMOVE OR REPLACE BC BODY COMPONENTS	91
R711 ISOLATE MALFUNCTIONS ON BC MAGAZINES	91
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	91
F259 SALVAGE WASTE FILM	88
R721 REMOVE OR REPLACE BC INTERVALOMETERS	88
R708 ISOLATE MALFUNCTIONS ON BC BODIES	88
R706 BENCH CHECK BC MAGAZINES	88

TABLE 6a (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE PERFORMING)

B-52G	70	B-52D	33
B-52H	42	F-4	12

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

K-17 BOMBSPOTTING CAMERA	94
KS-32 RADAR RECORDING CAMERA	79
O-15 RADAR RECORDING CAMERA	27

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

MULTIMETERS (PSM-6)	85
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	76
GROUND POWER UNITS	70
TORQUE WRENCHES	58
TENSION GAUGES	49
MD-3	36
FILM REWIND TABLES/FIXTURES	33
AERIAL CAMERA TS	33
LIGHT&11S (NF-2)	30
AIR CONDITIONERS	27
MD-60	27
PORTABLE HEATERS	27

TABLE 6b
RADAR RECORDING CAMERA SYSTEMS PERSONNEL
(GRF122)

TASKS	PERCENT MEMBERS PERFORMING (N=15)
K490 OPERATIONALLY CHECK RRC SYSTEMS IN SHOP	100
K491 OPERATIONALLY CHECK RRC SYSTEMS ON AIRCRAFT	100
K501 REMOVE OR REPLACE RRCS FROM AIRCRAFT	100
K496 REMOVE OR REPLACE RRC EXPOSURE FREQUENCY CONTROL BOXES	100
K488 OPERATIONALLY CHECK RRC EXPOSURE FREQUENCY CONTROLS IN SHOP	93
K475 BENCH CHECK RRC EXPOSURE FREQUENCY CONTROL BOXES	93
K495 REMOVE OR REPLACE RRC BODY COMPONENTS	93
K480 ISOLATE MALFUNCTIONS ON RRC EXPOSURE FREQUENCY CONTROL BOXES	93
K484 ISOLATE MALFUNCTIONS TO RRC EXPOSURE FREQUENCY CONTROL BOXES	93
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	93
J508 VISUALLY INSPECT RRC SYSTEMS	87
K474 BENCH CHECK RRC BODIES	87
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	87
K487 OPERATIONALLY CHECK RRC EXPOSURE FREQUENCY CONTROLS ON AIRCRAFT	87
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	87
F249 REMOVE OR REPLACE LIGHT BULBS, FUSES, OR CIRCUIT BREAKERS	87
F243 REMOVE OR REPLACE CANNON PLUGS, CONNECTORS, OR PINS	87
K479 ISOLATE MALFUNCTIONS ON RRC BODIES	87
E153 LOCATE PART OR STOCK NUMBERS	80
F208 CLEAN MIRRORS OR LENS WITH STATIC HAIR BRUSHES OR COMPRESSED AIR	73
K483 ISOLATE MALFUNCTIONS TO RRC BODIES	73
F237 READ OR INTERPRET WIRING DIAGRAMS	73

TABLE 6b (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

F-4	67
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Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

KD-26 RADAR RECORDING CAMERA SYSTEMS	27
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Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

GROUND POWER UNITS	73
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	68
MULTIMETERS (PSM-6)	67
OSCILLOSCOPES	47
FREQUENCY COUNTERS	33
LIGHT&11S (NF-2)	29
DIFFERENTIAL VOLTMETERS	27

TABLE 6C

AIRCRAFT CAMERA FILM AND WEAPONS SYSTEMS EVALUATION
MISSILE (WSEM) TAPES PROCESSING PERSONNEL
(GRP070)

TASKS	PERCENT MEMBERS PERFORMING (N=15)
U781 CLEAN FILM PROCESSORS	100
U786 OPERATE FILM PROCESSORS	100
U782 CLEAN WSEM TAPE PROCESSORS	100
U787 OPERATE WSEM TAPE PROCESSORS	100
U790 VISUALLY INSPECT FILM PROCESSORS	100
U785 MIX FILM PROCESSING CHEMICALS	100
U788 OPERATIONALLY CHECK FILM PROCESSORS	100
Y784 MIX CHEMICALS FOR WSEM TAPE PROCESSORS	100
U789 OPERATIONALLY CHECK WSEM TAPE PROCESSORS	100
U791 VISUALLY INSPECT WSEM TAPE PROCESSORS	93
F199 ALIGN OR ADJUST FILM SUPPLY OR TAKE-UP MECHANISMS	87
U783 CRITIQUE AIRCRAFT CAMERA FILMS	80
K498 REMOVE OR REPLACE RRC FILM MAGAZINES	73
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	73
K471 ADJUST RRC MAGAZINES	73
F259 SALVAGE WASTE FILM	73
F186 ADJUST AIRCRAFT CAMERA CLUTCH TENSION	73
K489 OPERATIONALLY CHECK RRC FILM TITLERS	73
E153 LOCATE PART OR STOCK NUMBERS	73
K497 REMOVE OR REPLACE RRC FILM MAGAZINE COMPONENTS	73
F215 DELIVER PROCESSED FILM OR TAPES TO USING AGENCIES	73
K490 OPERATIONALLY CHECK RRC SYSTEMS IN SHOP	73
K501 REMOVE OR REPLACE RRCS FROM AIRCRAFT	73
K495 REMOVE OR REPLACE RRC BODY COMPONENTS	73
F193 ALIGN OR ADJUST AIRCRAFT CAMERA GEARS	73

TABLE 6C (CONTINUED)
SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

F-4	13
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Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

917A MOTION PICTURE CAMERA	93
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Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

MULTIMETERS (PMS-6)	73
TORQUE WRENCHES	67
AMMETERS	53
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	27
TORQUE WATCHES	27

TABLE 7
SUPERVISORY PERSONNEL
(GRP046)

TASKS	PERCENT MEMBERS PERFORMING (N=67)
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	90
C106 WRITE APRS	82
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	82
A8 DETERMINE WORK PRIORITIES	81
C100 PROVIDE TECHNICAL ASSISTANCE FOR JOB-RELATED PROBLEMS	79
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	79
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	78
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	78
A24 PLAN WORK ASSIGNMENTS	78
A21 PLAN OR SCHEDULE WORK ASSIGNMENTS	75
D122 DEMONSTRATE OPERATION OF EQUIPMENT	73
C93 INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	72
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	70
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	70
A18 ESTABLISH WORK PRIORITIES	67
A33 SCHEDULE WORK ASSIGNMENTS	67
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	67
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	67
A14 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	66
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	63
C69 ANALYZE WORK LOAD REQUIREMENTS	61
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	61
E169 MAKE ENTRIES ON AF FORMS 797 (JOB QUALIFICATION STANDARD CONTINUATION)	61
B43 DIRECT OR PARTICIPATE IN MOBILITY EXERCISES	60
E153 LOCATE PART OR STOCK NUMBERS	60

TABLE 7

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

RF-4C	34		
F-4	18	U-2	18
SR-71	18	A-10	15

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

NONE

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	75
MULTIMETERS (PSM-6)	72
FREQUENCY COUNTERS	60
DIFFERENTIAL VOLTMMETERS	58
TORQUE WRENCHES	52
TENSION GAUGES	46
FILM REWIND TABLES/FIXTURES	43
CIRCUIT CARD EXTENDERS	42
LIGHTALLS (NF-2)	39
AMMETERS	39
GROUND POWER UNITS	36
VACUUM GAUGES OR REGULATORS	36
STOP WATCHES	34
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	33
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	33
VACUUM TUBE VOLTMMETERS (VTVM)	33
SIGNAL GENERATORS	31
AIR GUNS	28
CHART RECORDERS	28
GREASE GUNS	27
NOSE DOLL ASSEMBLIES	27
AIR COMPRESSORS	25
MD-60	25
DUMMY LOADS	25
TORQUE WATCHES	25

TABLE 7a
SECTION CHIEFS
(GRP216)

TASKS	PERCENT MEMBERS PERFORMING (N=23)
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	100
A21 PLAN OR SCHEDULE WORK ASSIGNMENTS	100
A31 SCHEDULE LEAVES OR PASSES	100
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	96
A33 SCHEDULE WORK ASSIGNMENTS	96
A25 PREPARE DUTY ROSTERS	96
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	96
B48 INDOCTRINATE NEWLY ASSIGNED PERSONNEL	96
C89 EVALUATE WORK SCHEDULES	91
C106 WRITE APRs	91
A8 DETERMINE WORK PRIORITIES	91
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	91
C69 ANALYZE WORK LOAD REQUIREMENTS	91
B39 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	91
A24 PLAN WORK ASSIGNMENTS	91
A18 ESTABLISH WORK PRIORITIES	91
A3 ATTEND STAFF MEETINGS, COUNCIL MEETINGS, OR BOARD MEETINGS	91
A14 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	91
A20 PLAN OR PREPARE BRIEFINGS	91
A7 DETERMINE REQUIREMENTS FOR SPACE, EQUIPMENT, OR SUPPLIES	91
B50 INITIATE PUNITIVE ACTIONS OR RECOGNITION FOR COMMENDABLE PERFORMANCES	91
B49 INITIATE PERSONNEL ACTION REQUESTS	91
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	87
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	87
B43 DIRECT OR PARTICIPATE IN MOBILITY EXERCISES	87

TABLE 7a (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE PERFORMING)

RF-4C	30	F-5	13
F-4	22	F-16	13
A-10	22	F-111	13

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

V-1000AB-R TEAC	26
V-4200G-N-TEAC	26

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	65
FREQUENCY COUNTERS	52
MULTIMETERS (PSM-6)	52
LIGHTS (NF-2)	48
TORQUE WRENCHES	48
GROUND POWER UNITS	44
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	39
TENSION GAUGES	39
FILM REWIND TABLES/FIXTURES	35
AMMETERS	35
AUDIO SIGNAL GENERATORS	35
AVTR SUPPORT KITS	35
DIFFERENTIAL VOLTMETERS	35
SIGNAL GENERATORS	35
AIR COMPRESSORS	30
AIR CONDITIONERS	30
MD-60	30
CIRCUIT CARD EXTENDERS	30
TORQUE WATCHES	30
MD-3	26
GVTR SUPPORT KITS	26

TABLE 7b

LINE SUPERVISORS
(GRP113)

TASKS	PERCENT MEMBERS PERFORMING (N=18)
F268 VISUALLY INSPECT EGRESS SYSTEMS FOR SAFETY	100
F211 COORDINATE WITH CREW CHIEFS OR OTHER PERSONNEL ON ACCESSIBILITY OF AIRCRAFT	94
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	94
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	94
E153 LOCATE PART OR STOCK NUMBERS	94
F267 VISUALLY INSPECT COCKPIT PANELS	94
F237 READ OR INTERPRET WIRING DIAGRAMS	94
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	94
C100 PROVIDE TECHNICAL ASSISTANCE FOR JOB-RELATED PROBLEMS ENCOUNTERED BY SUBORDINATES	94
F270 VISUALLY INSPECT MISSION BAYS	89
C71 COUNSEL SUBORDINATES ON WORK PROGRESS	89
F253 REMOVE OR REPLACE SENSOR PROTECTIVE DEVICES, SUCH AS COVERS	89
D116 CONDUCT OJT	83
A8 DETERMINE WORK PRIORITIES	83
C106 WRITE APRs	83
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	83
E178 MAKE ENTRIES ON AFTO FORMS 781 SERIES	83
D122 DEMONSTRATE OPERATION OF EQUIPMENT	83
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	83
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	78
E169 MAKE ENTRIES ON AF FORMS 797 (JOB QUALIFICATION STANDARD CONTINUATION)	78
E179 MAKE ENTRIES ON AFTO FORMS 95 (SIGNIFICANT HISTORICAL DATA)	78
C70 CONDUCT SELF-INSPECTIONS OF FACILITIES	72
F218 DISPATCH MAINTENANCE CREWS	72
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	72

TABLE 7b (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE PERFORMING)

SR-71	72	U-2	33
RF-4C	50	TR-1	28

Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

HR-308B FRAMING CAMERA	56
HR-308C FRAMING CAMERA	56
OPTICAL BAR CAMERA	50
VIEWFINDER	44
E-489 MAPPING CAMERA	44
IRIS-III	33
VIEWSIGHT	33
DRIFTSIGHT	28
KS-87 FRAMING CAMERA SYSTEMS	28
T-35	28
VF-57 VIEWFINDER SYSTEMS	28

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

DIFFERENTIAL VOLTMETERS	94
FREQUENCY COUNTERS	94
MULTIMETERS (PSM-6)	94
OSCILLOSCOPES	94
FILM REWIND TABLES/FIXTURES	89
TORQUE WRENCHES	89
VACUUM TUBE VOLTMETERS (VTVM)	83
CIRCUIT CARD EXTENDERS	78
VACUUM GAUGES OR REGULATORS	78
STOP WATCHES	72
TENSION GAUGES	72
AIR GUNS	67
NOSE DOLLY ASSEMBLIES	67
MAINTENANCE DOLLIES	61
MECHANICAL HOISTS	61
CHART RECORDERS	61
GREASE GUNS	56
BORESIGHTING TOOLS AND ALIGNMENT FIXTURES	56
AIR CONDITIONERS	50
FLIGHTLINE STANDS (B-4, B-5)	50

TABLE 8
TECHNICAL TRAINING PERSONNEL
(GRP134)

TASKS	PERCENT MEMBERS PERFORMING (N=9)
D137 PREPARE LESSONS PLANS	100
D111 ADMINISTER TESTS	100
D142 SCORE TESTS	100
D117 CONDUCT RESIDENT COURSE CLASSROOM TRAINING	89
D144 WRITE TEST QUESTIONS	89
D131 EVALUATE PROGRESS OR RESIDENT COURSE STUDENTS	67
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	67
D120 COUNSEL TRAINEES ON TRAINING PROGRESS	67
D121 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	56
D122 DEMONSTRATE OPERATION OF EQUIPMENT	56
E160 MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	56
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	56
B51 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	44
D143 SELECT INDIVIDUALS FOR SPECIALIZED TRAINING	33
D138 PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	33
D145 WRITE TRAINING REPORTS OR RECORDS	33

TABLE 8 (CONTINUED)

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

RF-4C	11
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Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

NONE

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

OSCILLOSCOPES	78
AIR CONDITIONERS	51
AUDIO SIGNAL GENERATORS	44
MULTIMETERS (PSM-6)	44
AMMETERS	33

TABLE 8
ADMINISTRATIVE PERSONNEL
(GRP034)

TASKS	PERCENT MEMBERS PERFORMING (N=11)
E164 MAKE ENTRIES ON AF FORMS 2413 (SUPPLY CONTROL LOG)	82
E162 MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	82
E160 MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	82
B52 INVENTORY EQUIPMENT, SUPPLIES, OR TOOLS OTHER THAN CONSOLIDATED TOOL KITS (CTK)	73
E153 LOCATE PART OR STOCK NUMBERS	73
E177 MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	64
E182 REVIEW DAILY DOCUMENT REGISTERS	64
E158 MAKE ENTRIES ON AF FORMS 126 (CUSTODIAN REQUEST LOG)	55
E155 MAINTAIN FILES OF MAINTENANCE RECORDS	45
B55 PREPARE REQUISITIONS FOR SUPPLIES, TOOLS, OR EQUIPMENT	45
A7 DETERMINE REQUIREMENTS FOR SPACE, EQUIPMENT, OR SUPPLIES	45
W842 INVENTORY CONSOLIDATED TOOL KITS (CTK)	45
A17 ESTABLISH STOCK LEVEL OF SUPPLIES	45
E181 REVIEW CUSTODIAN ACCOUNT AND RECEIPT LISTINGS (CACRL)	45
E148 COMPLETE MAN-HOUR ACCOUNTING RECORDS	36
E147 COMPLETE AWAITING PARTS (AWP) VALIDATION LISTINGS	36
E149 COMPLETE OR ATTACH EQUIPMENT STATUS TAGS	36
F263 STORE PHOTO EQUIPMENT IN CLIMATIC STORAGE AREAS	36
F227 PACK OR UNPACK EQUIPMENT	36
C93 INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	36
A12 DEVELOP RECORDS, MAINTENANCE, AND DISPOSITION FILES	36
D135 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	27
F269 VISUALLY INSPECT LINE REPLACEABLE UNITS (LRU)	27
B43 DIRECT OR PARTICIPATE IN MOBILITY EXERCISES	27

TABLE 8A

SELECTED BACKGROUND INFORMATION

Aircraft Maintained
(10 PERCENT OR MORE RESPONDING)

RF-4C	36	T-38	18
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Major Systems Maintained
(25 PERCENT OR MORE RESPONDING)

KA-56 PANORAMIC CAMERA SYSTEM	46
KA-91 PANORAMIC CAMERA SYSTEM	46
KS-87 FRAMING CAMERA SYSTEM	46
T-11 MAPPING CAMERA SYSTEM	46
AN/AAD-5 INFRARED RECON	36
AN/ASC-154 DATA DISPLAY SYSTEMS	27
VIEWFINDER	27
VF-57 VIEWFINDER SYSTEM	27

Major Equipment Utilized
(25 PERCENT OR MORE RESPONDING)

AIR CONDITIONERS	51
LIGHTS (NF-2)	46
MULTIMETERS (PSM-6)	46
TORQUE WRENCHES	36
FLIGHTLINE MAINTENANCE STANDS (B-4, B-5)	27
GROUND POWER UNITS	27
OSCILLOSCOPES	27

END

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